

amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



VOL. 47, NO. 4

APRIL 1979

FEATURED IN THIS ISSUE:

- ★ **GETTING ON TO 160 METRES**
- ★ **10/11 Mx DIRECTION FINDING LOOP AERIAL**
- ★ **EQUIPMENT REVIEW: THE ALPHA P76 LINEAR AMPLIFIER**
- ★ **OSCAR 8 MODE "J" PRE-AMP**
- ★ **THE IMPORTANCE OF AMATEUR REPRESENTATION AT WARC**

Registered for posting as a Publication --
Category "B".



IC22S, SMALL WONDER

ICOM's matchless mobile IC22S has, since its introduction, been the standard against which all other VHF mobile transceivers have been measured. It is prime example of ICOM's quality engineering, peak performance and phenomenal flexibility blended into one splendidly simple and affordable radio. Small wonder that the IC22S has been the most popular radio that ICOM has ever offered and the most popular 2m rig in Australia.

Built to be viable operating hardware for years to come, with a magnificent high sensitivity receiver and instant programming of any 22 of 256 possible frequencies, the IC22S is priced for the mobile beginner and the multi-vehicle serious VHF enthusiast. Small wonder that many hams own and operate more than one IC22S.

With quick change mobile mount, external speaker provisions, and 90 day VICOM warranty, the IC22S is the perfectly affordable radio to those whom present performance and future possibilities are important. Small wonder.

All ICOM radios significantly exceed FCC Specifications limiting spurious emissions.

Specifications: Frequency Range: 146-148 MHz □ Voltage: 13.8 V DC negative ground □ Current Required: TX: 2 amps at 10 W; 0.9 amp at 1 W; RX: 700 mA at max audio □ Size: 58mm(W) x 156mm(H) x 238mm(D) □ Weight: 1.9 Kg □ Number of Channels: 22 selected from 256 possible □ Power Output: 10 W or 1 W, selected □ Modulation Width: 5 KHz □ Microphone Impedance: 500 ohms □ Spurious Level: -60 dB below carrier □ Modulation Acceptance: 16FSK □ Receiver Sensitivity: 4 mv for 20 dB quieting □ Spurious Response: 60 dB or more attenuation □ Bandpass: ±7.5 KHz, -6 dB; ±15 KHz, -60 dB □ Squelch Sensitivity: -8 dB below 1 mv

HEVY/HF AMATEUR AND MARINE COMMUNICATION EQUIPMENT

DISTRIBUTED BY:



AMATEUR RADIO DIVISION
68 Eastern Road
SOUTH MELBOURNE VIC 3205
PH (03) 699 6700 Telex AA30566

Ballarat: 44 3882
Perth: 446 3232
Launceston: 32 7234
Adelaide: 43 7981
Gold Coast: 32 2644
Canberra: 82 3581
Brisbane: 38 4480
Sydney: 681 3544
Hobart: 43 6337
Melbourne: 836 8635



amateur radio

Published monthly as its official journal by
the Wireless Institute of Australia, founded
1910.

APRIL 1979

VOL. 47, No. 4

PRICE: 90 CENTS

(Send free and post paid to all members)

Registered Office:
2/517 Toorak Road,
Toorak, Victoria, 3142.

EDITOR:
BRUCE BATHOLS* VK3UV

ASSISTANT EDITORS:
RON COOK VK3AFW
GUY SONES* VK3AUW

TECHNICAL EDITORS:
BILL RICE* VK3ABP

CONTRIBUTING EDITORS:
BOB ARNOLD VK3ZBB
MIKE BAILEY VK3HDO
RICK CHAMPNESS VK3ASD
SYD CLARK VK3ASO
HORST DREYER* VK3DM
DAVID HULL VK3ZDH
ERIC JAMESON VK3LSP
KEN JEWELL VK3AKK
PETER MILL VK3ZPP
LEN POYNTER* VK3ZDP
BILL VERRALL VK3WV
WALLY WATKINS VK3ZNW

DRAFTING:
NEIL OSBORNE* VK3YEI

PHOTOGRAPHER:
REG GOUDGE —

BUSINESS MANAGER:
PETER DODD VK3CIF

ADVERTISING:
PETER SIMMONS

***Member of Publications Committee**
Enquiries and material to:
The Editor,

PO Box 2611W, GPO Mailbox, 3001

Copy is required by the **Last of each month**. Acknowledgement may not be made unless specially requested. All important items should be sent by **certified post**. The editor reserves the right to edit all material, including Letters to the Editor and Hamada, and reserves the right to refuse acceptance of any material, without specifying a reason. Advertising: Material should be sent direct to P.O. Box 180, Toorak, Vic., 3142, by the **15th of the month preceding publication**. Phone: (03) 24 6552—Hamada should be sent direct to P.O. Box 180, Toorak, Vic., 3142, by the **1st of the month preceding publication**.

Trade Practices Act: It is impossible for us to ensure that advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore advertisers and advertising agents will appreciate the absolute necessity that they declare that the provisions of the Act are complied with strictly. Readers are reminded that, when buying, obtaining or receiving goods from overseas including goods listed in advertisements by overseas manufacturers in the Journal, Customs import duties and Sales Tax may be levied on the goods at the time of importation. These amounts, if any, are payable by the purchaser and not by the seller, unless otherwise and the seller has made specific provision to this effect. In his quotation to the buyer or unless other prior arrangements are in force between the buyer and the seller.

Printers: **EQUITY PRESS PTY. LTD.**
60-52 Islington Street, Collingwood, 3068
Tel.: 41 3054, 41 5055

CONTENTS

TECHNICAL

A 10/11 Metre Direction Finding Loop Aerial	13	VK/ZL Dx Contest — Results 1978	39
Amateur Satellites	28	Westlakes Novice Contest — 1978 Results	35
An Inexpensive Amset Oscar 8 Mode "J" Rx Pre-Amp.	14	WICEN Operations in South Australia	15
Equipment Review -- The Alpha P76 Linear Amplifier	26	Woodpecker: Baloney or What?	28
Getting on to 160 Metres	9		
Novice Notes	18		
VHF Propagation between Albany and Adelaide	23		

GENERAL

Antenna Permits (and other non-events) in S-E Asia	19	Around the Trade	44
Donations to the WIA WARC Fund	5	Awards Column	40
Field Day — Pictorial Round-up, Wagga ARC Activity	32, 33	Contests	35
Ross Hull 78-79 Contest Results	35	Hamada	49
SEANET — The South East Asia Amateur Radio Network	17	Ionospheric Predictions	49
The Importance of Amateur Representation at WARC 1979	25	Letters to the Editor	34
		Obituary	50
		QSP	4, 5, 6, 12, 33, 35
		Repeaters	46
		Silent Keys	50
		VHF-UHF — an Expanding World	42
		WIANEWS	6
		WICEN	41
		You and Dx	48

DEPARTMENTS

ADVERTISERS' INDEX

50

COVER PHOTO

EASTERN AND MOUNTAIN DISTRICT RACU CLUB WARC DONATION

David Wardlaw VK3ADW(L), the WIA Federal President, scarcely believes his eyes when receiving a cheque for \$1000 from Tony King VK3IO, President of the EM & QRC. It is pleasing to record this most generous donation, and note the Club's recognition of the WIA effort at the conference.

Photo by Bill Ross VK3ZMI.

WIRELESS INSTITUTE OF AUSTRALIA

Federal President: Dr. D. A. Wardlaw VK3ADW

Federal Council:

VK1 Brig. R. K. Roseblade VK1QJ

VK2 Mr. T. I. Mills VK2ZTM

VK3 Mr. J. Pearson VK3PJD

VK4 Mr. A. R. McDonald VK4ATE

VK5 Mr. N. R. Howell VK5EOX

VK6 Mr. N. R. Penfold VK5SNE

VK7 Mr. R. K. Emmett VK7KK

Staff: Mr. P. B. Dodd VK5GIF, Secretary.

Part-time: Col. C. W. Perry, Mrs. J. M. Seddon and

Mr. P. Simmons (AR advertising).

Executive Officer: P.O. Box 160, Toorak, Vic., 3142.

2/517 Toorak Rd., Toorak, Ph. (03) 24 8652.

Divisional Information (all broadcasts are on Sun-

days unless otherwise stated):

ACT:

President — Mr. E. W. Howell VK1TH

Secretary — Mr. Ted Radcliffe VK1TR

Broadcasts — 3570 kHz and 146.5 MHz: 10.00Z.

NSW:

President — Mr. D. S. Thompson VK3BKT

Secretary — Mr. T. I. Mills VK2ZTM

Broadcasts — 1825, 3595, 7148 kHz, 28.47, 52.1,

82.825, 144.1, Ch. 5 and other relay

stations: 01.00Z. (Also Sunday evenings 09.30Z and Hunter Branch, Mondays 09.30Z on 3570 kHz and ch.

5 and 6).

VIC.:

President — Mr. E. J. Buggea VK3ZZN

Secretary — Mr. J. A. Adcock VK3ACA

Broadcasts — 1825, 3600, 7135 kHz — 53.032 AM,

144.2 USB and 2m Ch. 2 (5) repeater; 10.30 local time.

QLD.:

President — Mr. A. J. Aarssen VK4QA

Secretary — Mr. W. L. Gilella VK4ABG

Broadcasts — 1825, 3580, 7146, 14342, 21178, 28400, kHz; 2m (Ch. 42, 48): 09.00 EST.

SA:

President — Mr. G. J. Hurst VK5SHI

Secretary — Mr. C. M. Pearson VK5PPE

Broadcasts — 1825, 3595, 7095, 14175 kHz; 28.5 and 53.1 MHz, 2m (Ch. 8): 09.00 S.A.T.

WA:

President — Mr. L. A. Bell VK5AN

Secretary — Mr. P. Savage VK5HCP

Broadcasts — 3600, 7380, 14100, 14175 MHz, 52.885 and 2m (Ch. 2): 01.00Z.

TAS.:

President — Mr. I. Nicholls VK7ZZ

Secretary — Mr. M. Hammons VK7MHC

Broadcasts — 3570, 7130 (AM) kHz with relays on 2m Ch. 2 (5), Ch. 8 (H), Ch. 3 (H), 28.56, 52.825 (FM), 144.1 (AM) and 435 (FM) MHz 09.30 EST.

NT:

President — Dick Kloss VK8EZZ

Vice-Pres. — Barry Burns VK8BD

Secretary — Graeme Challinor VK9GG

Broadcasts — Relay of VK5SHI on 3.55 MHz and on 146.5 MHz in 2330Z. Show more transmission by VK5HAA on 3.555 MHz at 1000Z almost every day.

Postal Information:

VK1 — P.O. Box 46, Canberra, 2600.

VK2 — 14 Atchison St., Crows Nest, 2065 (Ph. (02) 43 5765 Tues & Thurs (10.00-16.00h).

VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03)

41 3555 Weekdays 10.00-15.00h).

VK4 — G.P.O. Box 639, Brisbane, 4001.

VK5 — G.P.O. Box 1254, Adelaide, 5001 — HQ at West Thetford Rd., Thetford (Ph. (08) 254 7443).

VK6 — G.P.O. Box N1002, Perth, 6001.

VK7 — P.O. Box 1010, Launceston, 7250.

VKA — (Incl. with VK5), Darwin AR Club, P.O. Box 37317, Winnellie, N.T., 5778.

Show more transmissions — more week-day evenings about 09.30Z onwards around 3550 kHz.

VK QSL BUREAUX

The following is the official list of VK QSL Bureaux, all are inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 1173, Canberra, A.C.T. 2601.

VK2 — QSL Bureau, C/- Hunter Branch, P.O. Terrells, N.S.W. 2284.

VK3 — Inwards QSL Bureau, Mr. E. Trebilcock, 840 Gillies Street, Thornbury, Vic. 3071.

VK4 — Outwards QSL Bureau, Mr. R. R. Proves, 63 Brewer Road, Bandiana, Vic. 3204.

VK5 — QSL Officer, G.P.O. Box 538, Brisbane, Qld., 4001.

VK6 — QSL Bureau, Mr. Geo. Luxon VK3RXY, 203 Belair Road, Torrens Park, S.A. 5082.

VK8 — QSL Bureau, Mr. J. R. Rumble VK8RUA, G.P.O. Box F319, Perth, W.A. 6001.

VK7 — QSL Bureau, G.P.O. Box 3710, Hobart, Tas. 7001.

VKA — QSL Bureau, C/- VK5HAA, P.O. Box 1416, Darwin, N.T. 0804.

VKB — QSL Bureau, C/- VK5HAA, P.O. Box 23 Landale Street, Box Hill, Vic. 3128.

The WIA, mindful of the proximity of the WARC, has launched, in addition to members of the Institute and individual non-member amateurs, an appeal to those suppliers of amateur equipment advertising in "Amateur Radio", asking them to give us assistance towards bearing the financial burden of the Amateur Service WARC expenses.

The WIA has urged its members to support our advertisers. We are now asking them to support the Amateur Service's WARC effort. An effort aimed at preserving a future viable Amateur Service.

We are sure that direct representation at the Conference itself, and at all the preparatory meetings, is the most effective way to support the cause of Amateur Radio, and as a consequence have been deeply involved.

From experience I know that no matter how favourably disposed, and how well meaning any administration is, there is no substitute for an actual representative being present.

He can make sure the position as agreed by the Administration is pursued and exploited to the utmost.

I know that you as members of the WIA agree as can be seen by your financial backing and also your messages of support.

Again, it is this presence at the Conference, at meetings before the Conference, and probably at meetings after the Conference, that is the single most important factor in providing support for the Amateur Service.

Expenses have already been incurred with the participation of amateurs as members of the Australian delegation to the Special Preparatory Meeting of the CCIR.

It has been said that if Australia had not presented a paper, and if no amateur had been a member of its delegation, the satisfactory result obtained might well have been different.

It is therefore heartening to be able to report in this issue the early generous support of five of our advertisers.

Each month for the next twelve months, an updated list of our commercial advertising "WIA WARC Fund Supporters" will be published in "Amateur Radio".

I would also like to thank the Eastern and Mountain District Radio Club of Melbourne for their magnificent donation of \$1000 to WARC funds, made at their annual general meeting early in March.

It is support like this that makes those involved in preparations for the Conference feel that all those hours of work are being appreciated.

DAVID WARDLAW VK3ADW
Federal President

WIA (FEDERAL) DIRECTORY

MEMBERS OF EXECUTIVE

Dr. D. A. Wardlaw VK3ADW, Federal President.
Mr. P. A. Wollfenden VK3ZPA, Exec. Vice-Chairman.
Mr. K. C. Seddon VK3ACCS, Member.
Mr. G. Scott VK3ZRR, Member.
Lt-Col. J. McLean Bennett VK3ZA, Member.
Secretary: Peter B. Dodd VK3QIF.

IARU LIAISON OFFICER AND IMMEDIATE PAST FEDERAL PRESIDENT

Mr. M. J. Owen VK3KI.

INTRUDER WATCH CO-ORDINATOR

Mr. A. W. H. Chandler VK3LJC.

FEDERAL REPEATER SUB-COMMITTEE

Mr. K. C. Seddon VK3ACCS, Chairman.
Mr. K. W. Jewell VK3AKK.
Mr. J. L. Martin VK3ZJG.
Mr. P. S. Mill VK3ZPP.

MANAGING EDITOR AND

CHAIRMAN OF PUBLICATIONS COMMITTEE

Mr. B. Bellahs VK3UV.

FEDERAL EDUCATION CO-ORDINATOR

Mr. G. F. Scott VK3ZRR.

FEDERAL HISTORIAN

Mr. G. M. Hull VK3ZS.

FEDERAL CONTESTS MANAGER

Mr. W. A. Watkins VK2ZNW/NCU.

FEDERAL AWARDS MANAGER

Mr. W. D. Verrall VK3SW.

FEDERAL VHF/UHF ADVISORY COMMITTEE

Mr. P. A. Wollfenden VK3ZPA, Chairman.
Mr. I. W. Cowan VK3ZDW.
Mr. L. Jones, VK3BKF.

Mr. K. G. Malcolm VK3ZYK.
Mr. J. L. Martin VK3ZJC.
Mr. K. L. Phillips VK3AUQ.
Mr. W. M. Rice VK3ADP.

FEDERAL RTTY COMMITTEE

Mr. N. Hawkins VK2MG, Chairman.
Mr. P. B. Card VK2ZBX.
Mr. R. E. Taylor VK2AOE.

PROJECT ASERT COMMITTEE

Mr. R. C. Arnold VK3ZBB, Chairman.
Mr. P. A. Wollfenden VK3ZPA/NB.
Mr. K. G. McCracken VK2CAK.
Mr. L. Jones VK3BKF.
Mr. G. C. Brown VK3YGB.

AMATEUR SATELLITES

Mr. R. C. Arnold VK3ZBB.

FEDERAL WICEN CO-ORDINATOR

Mr. R. G. Henderson VK1RHH.

VK/ZL/Q CONTEST MANAGER (VK)

Mr. N. R. Penfold VK6NE.

FEDERAL VIDEOTAPE CO-ORDINATOR

Mr. J. F. Ingham VK3KO.

FEDERAL COUNCILLOS

Please see main Directory.

ALTERNATE FEDERAL COUNCILLORS

VK1 — Mr. E. M. Howell VK1TH.
VK2 — Mr. P. B. Card VK2ZBX.
VK3 — Mr. J. A. Adcock VK3KAC.
VK4 — Mr. D. T. Laurie VK4DT.
VK5 — Mr. G. J. Hulse VK5HI.
VK7 — Mr. P. D. Frith VK7PF.

DONATIONS TO WIA WARC FUND

LIST No. 1

The Executive wishes to acknowledge with grateful thanks the following donations:-

EDUCATION PURPOSES

Dick Smith sale of equipment — net proceeds	\$3500.00
---	-----------

WARC 79, from members

VK2ZQ	\$10
-------	------

VK2ALZ	2
--------	---

VK2ZAA	2
--------	---

VK2PN	2
-------	---

VK2BYS	2
--------	---

Tumut and Dist. ARC	2
---------------------	---

Bundaberg ARC and some members	44
--------------------------------	----

Townsville ARC and members	139
----------------------------	-----

VK2BXI	25
--------	----

VK8ZBC	5
--------	---

VK3AJT	77
--------	----

VK2ARP	5
--------	---

VK2BUL	40
--------	----

VK2BWE	20
--------	----

VK2BOT	6.67
--------	------

VK3HE	10
-------	----

Y60132	2
--------	---

VK3DZ	10
-------	----

VK3NVP	7
--------	---

VK2KI	10
-------	----

ADVERTISERS' DONATIONS

The Federal President wishes to extend grateful thanks to our advertisers for generous donations towards the expenses of WARC representation

MARCH 1979	\$
Dick Smith Electronics	500
Vicom International	1000
Bali Electronics	500
Chirnside Electronics	100
Scalar Industries	50

These are entitled to the use of the WIA emblem and the words: "WARC Amateur Supporter" in their advertising displays.

QSP

PENSIONERS

Not many changes requested by members, when faced with paying annual subscriptions, cause problems in the Executive office. One particular change, however, is guaranteed to cause maximum trouble — and that is a request to change a member's grading to pensioner status at this time of the year. In the first place **ONLY THE MEMBER'S DIVISION CAN APPROVE A RE-GRADING TO PENSIONER**. All such requests therefore have to be sent forward to the Division concerned. If there is any delay in approving the re-grade the member's name might be suppressed for his AR address label because of being unfinancial. Secondly, some problems can arise with recording payments and resulting credits or debits, when any re-grading is subsequently approved after the member had paid the full amount due prior to being re-graded. Best advice is to pay the pensioner rate and forthwith ask your Division for a re-grade.

"Visit sunny North Queensland and the

FOURTH

North Queensland Convention

HOSTED BY

TOWNSVILLE

AMATEUR
RADIO
CLUB

at TOWNSVILLE

15th & 16th SEPTEMBER, 1979

Contact TARC
P O Box 964
Townsville, Queensland 4810"

1979 CALL BOOK

Attention Secretaries of Divisions, Clubs, Repeater Groups, etc., etc.

The 1979 Australian Amateur Call Book is now being processed. If your group, club, etc., desires publicity in the 1979 Call Book, please forward relevant information to the Editor (Call Book), P.O. Box 2611W, Melbourne, Vic. 3001, by 30th April, 1979.

The following is required: Repeater information and up-dates, radio clubs, address and phone number of secretary, meeting dates, etc.

Material received after this date WILL NOT be included in the 1979 Call Book.

ACT NOW TO AVOID DISAPPOINTMENT.

Are you checking
our bands for

INTRUDERS

AND REPORTING SAME TO
THE INTRUDER WATCH
CO-ORDINATOR?

WIA NEWS

The meetings of Executive during February were taken up largely on 1979 Federal Convention business.

The following Agenda items (reported very briefly) for this Convention had been received up to the time of writing this —

FROM VK4

- (1) Executive to report on progress of negotiations for official Morse tests at higher than 10 w.p.m.
- (2) Executive to ask P. and T. for 2 monthly Morse code exams for all grades.
- (3) Executive to ask P. and T. for 3 monthly theory and Regs exams for all grades.
- (4) Executive to ask P. and T. for "out of hours" exams if the need arises.
- (5) Executive to report on TV Ch. 5A and 0 situations.

FROM EXECUTIVE

- (1) Discuss draft regulations for affiliation of Australia-wide amateur organisations.
- (2) Discuss a standardised membership proposal form.
- (3) Discuss best methods of disbursing or using the \$3500 proceeds from Dick Smith's sale.
- (4) Discussions on WARC 79 progress and IARU matters.
- (5) Discuss 10 metre beacon situation.
- (6) Outstanding repeater items.
- (7) Examine the future of AR, Exec. office and related matters.
- (8) Discuss "Handbook" revision.
- (9) Discuss a Position Paper on the Fed. Constitution.

The Executive decided to invite the Minister for P. and T., Mr. A. A. Staley, to address the Convention. It was also decided to invite Mr. Ron Henderson VK1RH, the Federal WICEN Coordinator, to attend the Convention as part of the Executive group.

CHANNEL 5A

Letters from the Minister of P. and T. to other Parliamentarians towards the end of last year indicate that TV Ch. 5A "is currently allocated to four television stations and seven translators throughout Australia". He recognises that the use of this channel does not accord with international practice but its more extensive use in recent years was due to increasing demand for TV services and re-allocation arising out of FM broadcasting.

As far as the Institute is concerned this is 4 stations and 7 translators too many. The point was made by the Minister that interference to amateur radio operations had been able to be resolved by means of special technical arrangements. Nothing was said about the reverse situation and it is this point which is exercising the VHFAC as well as the post WARC 79 situation.

In his opening speech for the Queensland 1978 Convention in mid-October, Mr. D. Juli, M.P., Member for Bowen and Secretary of the Communication Committee in Federal Parliament, is reported as saying that the decision for Ch. 5A to be used in metropolitan areas has been completely shelved and won't happen. He is also reported as saying that a Departmental investigation is under way to eliminate those areas using Ch. 5A for translators in some country areas. In regard to Ch. 0 he did say that Melbourne Ch. 0 will soon be going to Ch. 10 and a similar announcement about Brisbane 0 was also expected. The former has now been verified correct.

Nothing was known about the use of UHF for TV except for ethnic television as set out in the Media Release 78/18 of 20th September, 1978.

For us it is fortunate that Ch. 5A affects some other services, not only the amateur service.

JOINT COMMITTEE

A meeting of the Joint P. and T./WIA Committee was held on 21st February. An AOCP Theory exam syllabus was announced ready for discussion with the Institute.

If this is to be adopted early, the expectation was that the August AOCP Theory exam would be multi-choice.

Revised sample papers of the multi-choice Regulations Exam and the Novice Theory exam were ready for incorporation in the new Handbook. Copies were handed to the WIA.

Clarification was given about corrections made in amateur Morse sending exams. A total of 10 seconds extra is granted where a candidate properly corrects any errors. Indications are that there were some problems associated with the Novice Morse exams in February.

The introduction of a lower licence fee for pensioners is still held up in Canberra. A review is to be undertaken of the Amateur Advisory Committee Service. An examination of the input material for the Call Book is being made. The WIA proposal for longer term (and it is hoped cheaper pro rata) amateur licences is still held up awaiting the new Radio Act which might possibly see the light of day later this year.

According to reports, the refusal to permit amateurs to use the 50-52 MHz portion of the 6m band outside Channel 0 areas stems directly from the broadcasting service.

Nothing further appears to have happened about the suggestions of controls over the acquisition by anyone of transmitting equipment although this question is understood to be in the hands of the Department of Business and Consumer Affairs which relates to the Trade Practices Commission. Without a visit by Royalty no consideration will be given to the use of the "Ax" suffix by VK6s during their 150th anniversary celebrations.

SAA

The Institute is now represented by Mr. K. C. Seddon for the WIA, on the Draft Standard for Public Review DR78102 meetings. This relates to the siting of radiocommunication equipment.

WARC 79 DONATIONS

A panel elsewhere in this issue commences the list of donations most gratefully received.

LIFE MEMBERS

It is with great pleasure that news of Dr. David Wardlaw's Hon. Life Membership of the Victorian Division was received. Another very hard worker for the amateur cause was likewise deservedly honoured — Mr. Keith Roget.

MEETINGS

EXECUTIVE

On 8th February — almost wholly on Federal Convention matters — EXECUTIVE, again on 22nd February — noted apology advertisement in local newspaper, discussions on Federal Treasurer vacancy, appeal for WARC79 donations from commerce, Convention Agenda Items, Joint Committee and Handbook matters, 1979 RD Contest opening address by President of IARU, CCR Seminar in Sydney, inability to express an opinion without members' views on sale of alpha membership computer records, inserts into AR by mailing service.

PUBLICATIONS COMMITTEE

On 6th February — continuing dearth of photographs, especially front cover photographs, discussions on production of Great Circle Maps, WIA stickers, new Log Books and other routine matters.

PROJECT ASSERT

Proceeding satisfactorily as reported elsewhere. Meetings held 18th January and 7th February.

QSP

PREFIXES

Provisional allocations by the ITU have been made for Tuvalu as T2A-T2Z and German Democratic Republic Y2A-Y6Z — Radio Commun., February 1979

AMATEUR RADIO DIRECTION FINDING CHAMPIONSHIPS

Want to join in the IARU R1 AR direction finding championships in Poland 3rd to 9th September next? Competitions will be held on two amateur

bands — 3.5 MHz and 144 MHz. Rule 2.3 says "It is forbidden to give or take any assistance from or to any person including competitors, and also use of any means of transport — under pain of disqualification". Obviously an event for joggers.

HAM

RADIO SUPPLIERS

323 ELIZABETH STREET, MELBOURNE. PHONE 428 8136

9" x 6" SPEAKERS — brand new in cartons, 4 ohm impedance, ideal for car cassettes, radios, etc. \$4.00 each
Postage \$1. 10 FOR \$30.00 — BULK BUY.

AMATEUR LOG BOOK — \$2.00

BULK STORE DISPOSALS

104 HIGHETT ST., RICHMOND. PH. 428 8136 9 a.m. to 5 p.m.

BRAND NEW UR 57 CO-AXIAL CABLE. 75 ohm, 1/2" diam. 50c metre — \$4.00 100 metres.

100 FT. ROLL BELL WIRE — \$3.00 per Roll

USA RECORDING TAPE — POLYESTER. Size 7" 1800 \$5.95
1200 — \$5.90. Size 5" 1200 \$4.00 — 900 \$3.00

SINGLE CORE OUTSIDE SHIELDED CABLE 7/0.076, 100 yard rolls — \$15.00 per Roll

OMRON RELAY MK3 DC 35 volts, 3 amp rating, 3 pole changeover. To operate on 220 volts DC or 110 volts DC Series Resistor 6.63 ohms — \$5.00 each

NEW MAGNAVOX 53TS SPEAKERS. 5" x 3" 8 ohm, ideal for small extension speaker for communications equipment. \$1.95 each plus P&P

NEW AWA-THORN TV TUNERS, Type ENR5758. \$2 plus P&P

We also have a large range of **ELECTRONIC DISPOSALS EQUIPMENT**, Including TRANSFORMERS, CABLE, TEST EQUIPMENT, TRANSMITTERS, METERS, etc.

You are invited to call in and inspect. No parking problems at 104 HIGHETT STREET, RICHMOND. Phone 42 8136.

BUSINESS FOR SALE

Owing to the passing of Mr. KEN MILLBOURN, this business is offered for sale by tender as a going concern. Long lease available. OFFERS WELCOME. Interested parties should contact for appointment:

Mr. TERRY MILLBOURN — MELBOURNE (03) 781 5431

Meet the Professionals



Alpha 7B — Three 8874s, 2.4 KVA Hiperfil Xlmr no tune up. And full QSK.



Alpha 76A — Two 8874 tubes Hipersil Xlmr.
Alpha 76A — Three 8874 tubes. Alpha 76CA — Three 8874 tubes Hipersil Xlmr.



Alpha 77DX — One 8877 Tube Two Thousand Watts PEP.
Alpha 77SX — Two 8877 Tubes /Commercial or direct Export Only.



Alpha 374A — Two 8874 tubes. No Tune Up.
Broadband version of the 76A.



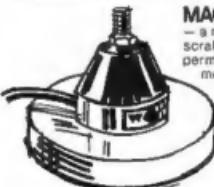
Australian Sales and Service from: **JAMES GOODGER**
AUSTRALIAN SOUND **PHONE: (02)**
AND SIGNAL RESEARCH **389 0428 and 389 7786**
AH: 36 7756
11 Edgecliff Road, Bondi Junction, N.S.W. 2022
Australia

IF YOUR SIGNAL'S GETTING PALER & PALER...

Whip out your old whip and whip in a Scalar

Scalar M40 BR Ham mobile brings you back to 10-2. Scalar M40 is a resilient fibreglass whip designed for the 435 MHz band. 4dB gain, omnidirectional colinear. These antennas come with Scalar's UHF base or any of the three alternatives below. There's no better whip than Scalar... there ain't any!!

3 MORE WAYS TO SCREW ON A SCALAR

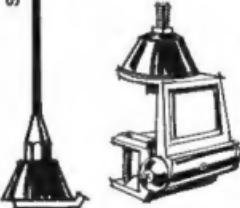


Scalar

MAGNABASE
— a magnetic base, scratch-free. Instant or permanent grip on any flat metal surface.



TRUNK MOUNT — special bracket holds it rock firm around the boot.



GUTTERGRIP
— screws on solid anywhere around the gutter of any vehicle.

Whip this coupon back Q.R.Q. to Scalar

Please send order form for Scalar M40 Ham Mobile with base. Or literature giving more information.

Please print.

NAME.....

ADDRESS.....

STATE.....

POSTCODE.....



88's from **SCALAR INDUSTRIES PTY. LTD.**

20 Shelley Avenue, Kilsyth, Vic. 3137 (03) 725 9677

N.S.W. 20 The Strand, Penshurst, 2222 02 570 1788

QLD. 969 Ann Street, Fortitude Valley, 4006 075 522594

Buy from Scalar, Vicom or your Ham Gear Retailer

Sideband Electronics Sales

DISTRIBUTORS OF COMMUNICATION TRANSCEIVERS

NEW! SKY-BAND MOBILE ANTENNAS

THIS NEWLY DESIGNED UNIQUE MOBILE ANTENNA HELICALLY WOUND EXTRA HEAVY DUTY. SIX FEET LONG, AND CAN HANDLE UP TO 400 WATTS P.E.P.

FEATURES:

Light weight,
S.W.R. better than 1: 1.05 at resonance
Covered with highest grade fireproof insulation
Chrome base with 3/8 24 tpi. thread
Available in colours, grey, white, blue, green
burnt orange, brown and black.

AVAILABLE:

SKY. 80M	3.5	Special Novice
	3.65	
SKY. 40M	7.06	
SKY. 20	14.150	
SKY. 15	21.100 and up.	
SKY. 10	28.5 and up.	

PRICE LIST:

SKY 80 6 feet long	3.5 MHz	\$28
SKY 40 6 feet long	7.060	\$26
SKY 20 6 feet long	14.150	\$26
SKY 15 6 feet long	21.100	\$25
SKY 10 6 feet long	28.500	\$24
Swivel mounts and chrome		
plated springs for all		\$13

All Sky-Band Antennas are carefully designed and have been individually tested. High quality fibreglass rod, wound with optimum thickness of wire to keep weight down, but maintain High Q. An elegant design to those who only want the best. All antennas are factory tuned for the lowest portion of the desired band and can simply be trimmed for your chosen frequency. Yes it is all Australian made! You don't pay for large overheads, instead we use the best material available and offer a mobile antenna which will resonate to our frequencies, unlike the previous overseas designed antennas.

ORDER NOW AND SPECIFY THE COLOUR YOU REQUIRE

New designs on the way similar to the famous 'Band Spanner' from 80-10 metres, tunable centre loaded, to be released soon.



SEND FOR A FREE CATALOGUE AND PRICE LIST



SALES & SERVICE

24. KURRI ST., LOFTUS, N.S.W.
P.O. BOX 184, SUTHERLAND, 2232

OPEN SATURDAYS TILL
NOON. Phone: 521-7573



CRYSTAL FILTERS - FILTER CRYSTALS - OSCILLATOR CRYSTALS SYNONYMOUS for QUALITY and ADVANCED TECHNOLOGY



Listed is our well-known series of 9 MHz crystal filters for SSB, AM, FM and CW applications.

Export inquiries welcomed

Filter Type	XF-9A	XF-9B	XF-9C	XF-9D	XF-9E	XF-9M	XF-9NB
Application	SSB Transmit	SSB Receive	AM	AM	FM	CW RTTY	CW RTTY
Number of Filter Crystals	5	8	8	8	8	4	8
Bandwidth (6 dB down)	2.5 kHz	2.4 kHz	3.75 kHz	5.0 kHz	12.0 kHz	0.5 kHz	0.5 kHz
Passband Ripple	< 1 dB	< 2 dB	< 2 dB	< 2 dB	< 2 dB	< 1 dB	< 0.5 dB
Insertion Loss	< 3 dB	< 3.5 dB	< 3.5 dB	< 3.5 dB	< 3.0 dB	< 5 dB	< 6.5 dB
Input-Output	Z _t 500 Ω	Z _t 500 Ω	Z _t 500 Ω	Z _t 500 Ω	Z _t 1200 Ω	Z _t 500 Ω	Z _t 500 Ω
Termination	C _t 30 pF						
Shape Factor	(6:50 dB) 1.7 (6:80 dB) 2.2	(6:60 dB) 1.8 (6:80 dB) 2.2	(6:40 dB) 2.5 (6:60 dB) 4.4	(6:60 dB) 2.2 (6:80 dB) 4.4			
Ultimate Attenuation	> 45 dB	> 100 dB	> 100 dB	> 100 dB	> 90 dB	> 90 dB	> 90 dB
Price	\$40.65	\$55.10	\$59.30	\$59.30	\$59.30	\$41.50	\$73.45

In order to simplify matching, the input and output of the filters comprise tuned differential transformers with the "Common" connections internally connected to the metal case.

Registration Fee: \$3.00; Air Mail: \$10 per ½ oz. Shipping weight: Filters 2 oz. ea.; Crystals ½ oz. ea. All Prices in U.S. Dollars.

Matching Oscillator Crystals

XF900 Carrier	9000.0 kHz	\$4.75
XF901 USB	6995.5 kHz	\$4.75
XF902 LSB	9001.5 kHz	\$4.75
XF903 BFO	8999.0 kHz	\$4.75
F-06 Crystal Socket (HC25/u)	-50	

Oscillator Crystals 50 kHz through 150 MHz available to order. Parallel resonant (30 pF) to 20 MHz series resonant above 20 MHz. Write for quotation to your requirements (include mechanical size & frequency).

Matching FM Crystals Discriminators for XF-9E

Freq Dev	Shape	Price
XD-9-01	- 5 kHz - 40 mV/kHz	\$27.80
XD-9-02	- 10 kHz - 24 mV/kHz	\$27.80
XD-9-03	- 12 kHz - 50 mV/kHz	\$27.80

GETTING ON TO 160 METRES

Sam Voron VK2BVS
2 Griffith Ave., East Roseville, N.S.W. 2069

Remember the saying, "We will stick them on 200 metres and below — they will never get out of their backyards with that".

Well, that was in the early era of amateur radio — sometime around the 1910s — an era when amateurs were able to use the entire unwanted range of frequencies called the medium and short waves.

Here only 60 kHz remains on the only Medium Frequency allocation available to amateurs in Australia today. From 1.8 to 1.860 MHz — the lowest frequency available for amateur exploration — it's still possible to experience the thrills and conditions which many of our original amateurs encountered in days gone by.

THE UNIQUE CHARACTERISTICS OF 160 METRES

Being the lowest frequency available for amateur use, the 1.8 MHz band is least effected by the ups and downs of the 11-year sunspot cycle which is responsible for the extensive variability common at higher frequencies.

Occasionally, when solar activity is particularly low, it may not be possible to contact stations within several hundred kilometres during the evening or night-time hours on the 80 metre band.

During such times, when skip zones exist on 80 metres, 160 metres becomes the only band available to maintain shortskip night-time contacts say between Sydney and Canberra.

1.8 MHz has been known to provide more effective communications within limestone caves than any other amateur band.

One of the most unique day-time aspects of 160 metres is the excellent groundwave coverage which can be achieved using fairly low power. In the United Kingdom, even though power is restricted to 10 watts on AM and 26 2/3rd watts PEP on SSB, 160 metres (or "top band" as it's known) has become as popular for local day-time communicating as is the 2 metre band here in Australia.

A coverage up to 150 miles can be obtained with significantly less mobile flutter than one would experience on 2 metres VHF (direct). Groundwave coverage on 80 metres (i.e. the useful range of waves following earth's curvature) is only around 90 miles.

160 METRES OR AROUND THE WORLD

In Australia, we are lucky in that there exists no power restriction on 160 metres.

But we are unlucky in that we only have use of 60 kilohertz, whereas countries such as the United Kingdom and the United States have the use of 200 kHz from 1.8 MHz right up to 2 MHz.

New Zealanders only have 35 kHz from 1.803 to 1.813 MHz and from 1.875 to 1.900 MHz.

Would you believe the Japanese have just 5 kHz from 1.9075 to 1.9125 MHz?

Yes, — once you get involved in 160 metres — it is easy to understand why amateurs around the world are keen to retain even a few valuable kilohertz in this part of the radio spectrum.

WHAT'S DIFFERENT ON 160M FROM THE OTHER BANDS?

Home-made equipment for one. Yes, on 160m it's possible to take your old mantel radio apart and build up your own transmitter and adjust your broadcast radio receiver to work on 160 metres.

AM for another. This reflects the sprinkling of home-made sets which operate on this band.

In Sydney small transistor radios are often modified to allow people to tune into the regular WIA 160 metre news broadcasts which can be heard twice each Sunday at 11 a.m. and 7.30 p.m. on 1.825 MHz. AM — so Short Wave, or should we say Medium Wave, listening is another aspect of the 160 metre scene.

The challenge of making up small 4 or 6 foot mobile antennas for 160 metres or trying to fit a 250 foot half-wave dipole in your backyard is another.

Facing the DX challenge as did Marconi — you'll have fun trying to work the United States in the early evenings or the Europeans just before sunrise.

How often do you find home-brewing, AM, active SWLing, challenging DX existing today as it did in years gone by?

In many ways 160 is a fascinating remnant whose history goes back to the beginning of our hobby. When you get on to 160 you'll soon sense through your contacts as well as in the various overseas magazines that dedication which 160 metre enthusiasts share the world over.

WHAT GEAR TO USE ON 160 METRES

Several multiband transceivers only cover 80 through to 10 metres. How can 160 metres be added?

For the mobile explorer where can one get a 12V transistorized 160m transceiver?

For the novice who just got his or her full amateur licence, what's the easiest way to get on to 160?

The answer . . .

MODIFY THE DICK SMITH 80 METRE TRANSVERTER ON TO 160 METRES

The Dick Smith transverter was designed to be connected on to any CB radio, allowing the new novice an inexpensive way of getting on to the 80 metre band.

The transverter, which comes in the form of a kit, can be built up in a few hours and allows you to transmit or receive on 3.5 MHz with the use of any 27 MHz transceiver. Power output is 10 watts AM and 30 watts on SSB.

Lots of novices now have upgraded to a commercial multiband transceiver and are wondering what to do with that transverter? Easy, modify it for 160.

Need a mobile for 160? Build up the transverter!

Want to add 160 to your home station? Then you'll find that the transverter will work just as well from 10 metres as it does using an 11 metre source (simply change the crystal in the transverter).

HOW DOES THE TRANSVERTER WORK?

As well as modifying this transverter for the 160 metre band, novices who have just got their full licence should be able to experiment with capacitor and coil values to add 40 and 20 metres.

Novices wanting some gear for 15 metres can likewise experiment to come up with an inexpensive set-up on that band.

Those wanting a small mobile on any of the HF bands may also find this information suggests possibilities.

The ultimate, one would imagine, would be to work all HF bands using this transverter to a simple CB unit — this would surely be the most inexpensive multiband transceiver out! Adding a VFO to the CB unit would make it comparable to commercial tunable systems. Maybe homebrewing can still be an economic proposition!

THE 80 METRE RECEIVER SECTION OF THE TRANSVERTER

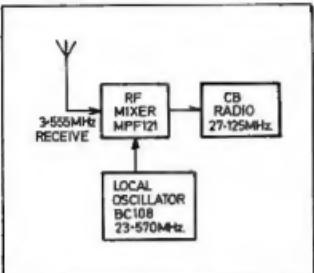


FIG. 1: Signals on the 3.5 MHz band are converted up to 27 MHz band on the Dick Smith 80 metre transverter.

In the mixer stage (see Fig. 1) (3.555 is added to 23.570 to produce the signal at 27.125 MHz). In this way it is possible to receive on 2.5 MHz by selecting different channels on the CB radio.

THE 80 METRE TRANSMITTER SECTION OF THE TRANSVERTER

In the mixer stage (see Fig. 2) (27.125 is subtracted from 23.570 MHz to produce 3.555 MHz). In this way it is possible to transmit on 80 metre frequencies by selecting different channels on the CB radio.

MODIFICATION DETAILS FOR 160m

To get the transverter on to 160 metres we must first change the crystal in the local oscillator.

The new crystal required is 25.3 MHz if you are using a CB transceiver.

On Receive
1.825 + 25.3 produces 27.125 MHz.

On Transmit
27.125 — 25.3 produces 1.825 MHz.

The new crystal required is 26.635 MHz if you are using a 23 channel 10 metre or multi band 80 to 10m transceiver on the 10 metre band tuned to 26.460 MHz.

On Receive
1.825 + 26.635 produces 28.460 MHz.
On transmit
28.460 — 26.635 produces 1.825 MHz.

The 5 channels obtained on 160 using CB or 10 metre channelized sets are:

23 channel numbering	18 channel Australian CB No. system	160 metre Frequency
12	8	1.805
13	9	1.815
14	10	1.825
15	11	1.835
16	12	1.855

This channel system is centred on 1825 kHz which is where most of the WIA broadcasts are conducted as well as being a popular listening and calling channel.

The transverter kit contains two printed circuit boards—the exciter/receiver board and the power amplifier board.

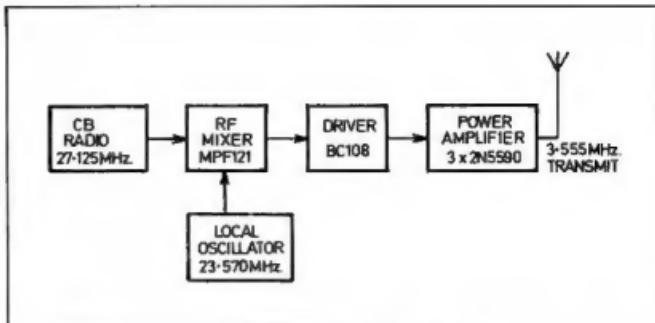


FIG. 2: 27 MHz is converted down to the 3.5 MHz band on the Dick Smith 80 metre transverter.

MODIFYING THE EXCITER/RECEIVER FOR 160 METRES

(1) You have replaced the crystal. Tune oscillator coil L5. One or two coil turns can be removed if this is found necessary. (See Fig. 3.)

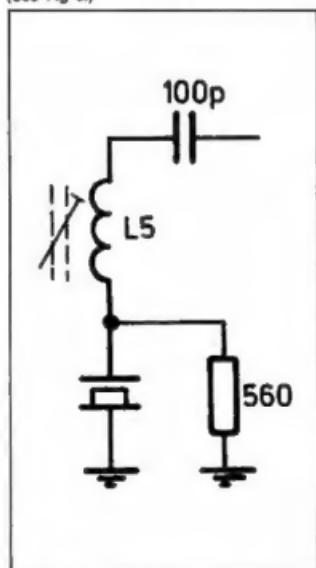


FIG. 3: Location of L5 in the Oscillator Circuit of the 80m Transverter.

MODIFYING THE RECEIVER FRONT END

(2) Add 300 pF across the existing 330 pF capacitor which is part of the 0.0022 uF divider network located at the input of L2 and the MPF121 (TR1) mixer. (See Fig. 4.)

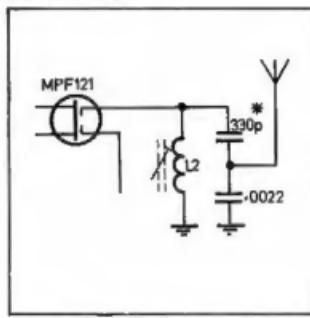


FIG. 4: Existing 330 pF Capacitor in the 80m transverter.

Set your receiver to 1825 kHz and, with a signal generator tuned to that frequency, adjust L2 and L1 (the 27 or 28 MHz receiver output coil) for maximum reading on your strength meter.

TUNING THE EXCITER

(3) You should be able to adjust coils L4 and L3 for maximum power output as indicated by the current panel meter on the transmitter. (See Fig. 5.)

No change was found necessary to the 470 pF capacitor associated with L3 or to the 330 pF capacitor associated with L4. These could be increased in value if your coils do not peak fully.

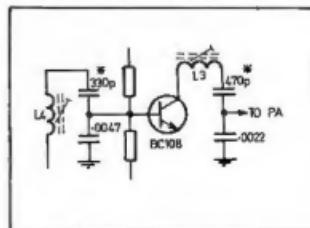


FIG. 5: Capacitors referred to above as located in the 80m transverter.

MODIFYING THE POWER AMPLIFIER FOR 160 METRES

(4) Add one more turn to the primary of T4 (i.e. 7 turns instead of 6). This is the PA output toroid (See Fig. 6)

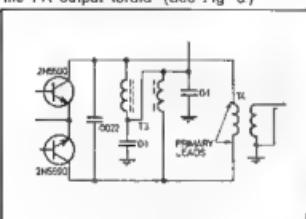


FIG. 6: Location of Cell TA in the 80 metre transverter

USING THE TRANSCONVERTER ON BOTH 80 AND 160 METRES

The modifications above will still permit you to operate on 80 metres.

An on-off switch with several rows of three contacts can be added to the front panel of the transverter just next to the transmit-receive switch.

With a flick of this switch you can switch in your new 160 metre local oscillator crystal, coil L2 and coil L3 both peaked for maximum performance on 160 metres. (See Fig. 7.) Both these coils can be mounted on tag strips just next to the original coils L2 and L3, which are tuned to 80 metres.

One end of each pair of coils and crystals is connected together. The other connections go to each end of the multi-contact switch. The common connection goes to the centre position on the switch.

Now you can operate on either 80 or 160 metres at the flick of a switch.

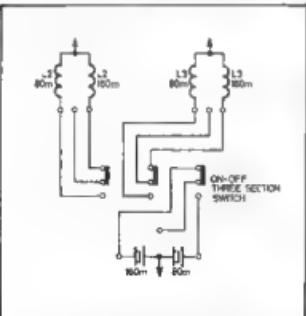
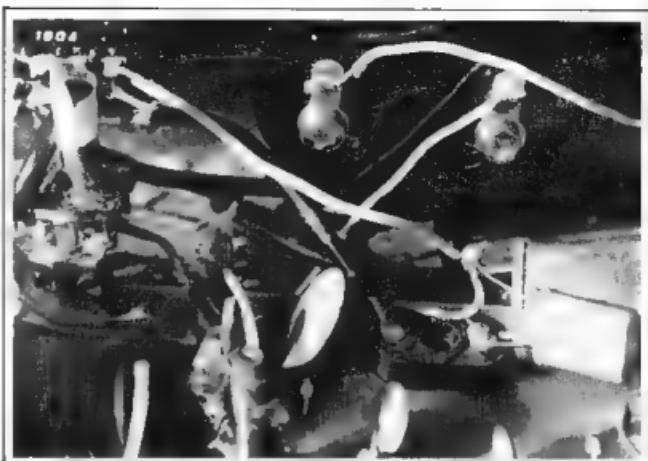


FIG. 7: Connecting Coils L2, L3 and Crystals to allow Switch selection of either 160 or 80 metre operation.

Coil L4 can be tuned for maximum output on 160 metres. The output on 80 metres should be quite reasonable.



A close-up of the two crystals in the crystal oscillator circuit used to select 80 and 160 Hz on the switch contacts shown.



Front view of transceiver. Notice that 160 and 80 Hz can be selected at the flick of a switch

RESULTS

For about a year I have been using a 23 channel Hygain V on 11 metres feeding the Dick Smith transverter modified on to 160 metres to relay the WIA broadcast around Sydney in the mornings and interstate in the evenings on AM.

It is certainly quite a reliable and exciting type of set-up. It is great not to have to say "the rig here is a 101 into a . . . etc.". I can always be assured of interesting contact on 160 when I say "the rig here is a modified CB set".

ANTENNAS

It is easy to put up an antenna on 160 metres! What! You say you can't fit a half wave 250 foot length of wire in your backyard!

Well, that's what I thought, but when I made my first QSO with Queensland using an 80m dipole I thought "I wonder—if I only had a 1.8 MHz dipole—I wonder!"

Make up the dipole and run it up and down trees, along your fence, don't worry about having ninety degree bends or turning sharply. My antenna is full of all of

these! It's only an average of 12 feet off the ground and lots of it lies on my house roof (actually 6 inches above it).

The results. Would you believe S6 in Canberra and Victoria and Queensland using only ½ a watt PEP! That is my consistent report at different times with different stations. And on full power it is an S9 (no worries).

So I have discovered the secret why even though 160m is the only band in the UK with a severe power restriction it is so

popular. It's a matter of low power into a decent antenna equalling excellent coverage.

To adjust the SWR just take a foot at a time off both ends of the dipole. Using no balun I have consistently bettered 1.5 to 1.

160 METRES AND TVI

There is no TVI or other problems. In fact using the TV isolation transformer in the December 1977 issue of AR on my TV set, I find that 160m is about the only band which won't give me any TVI problems

(even driving my linear to 400 watts PEP). Whereas, using the same set-up on 80m, I get TVI with only 5 watts of RF!

If you want to get away from TVI—

- (1) Try the AR Isolation transformer.
- (2) Move as far away from the TV frequencies as you can

- (3) Avoid the frequencies which resonate with the wire length interconnecting stereo gear

- (4) Join us down on 160m. It is as low as you can get riding that giant 160 metre long wave.

See you on the Medium Waves!

FOR MORE INFORMATION

See the article entitled "A solid state 27.35 MHz transverter" in Electronics Australia, April 1978.

QSP

DIGITAL

"The mere mention of the word in promotional literature for a piece of gear suggests state-of-the-art and associated high sales. Unfortunately digital readout offers only greater precision as opposed to analog readout systems. The accuracy of readout is determined by the scheme used for the measurement, not by the medium (digital or analog) itself. What good are five digits of readout if the accuracy is low enough that the last two digits don't mean anything?"

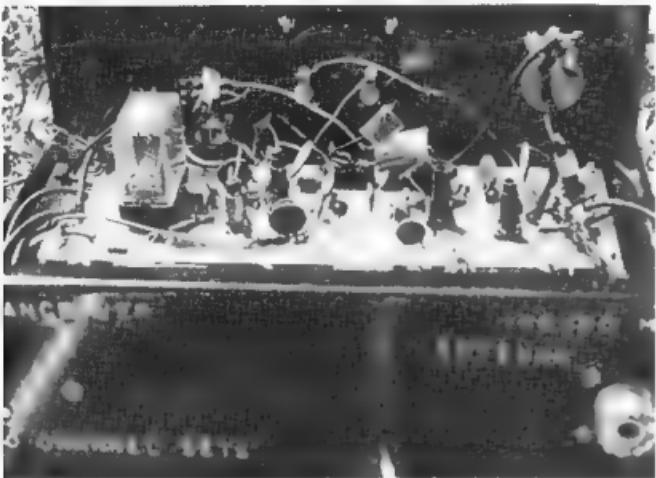
If a highly accurate means of measurement is employed in a digital readout system, a totally different situation exists. Full advantage of the greater readout precision can be taken, and readings "down to a proton's eyeblink" are possible, with far greater ease than with an analog system." —From QST September 1978.

YU PREFIXES

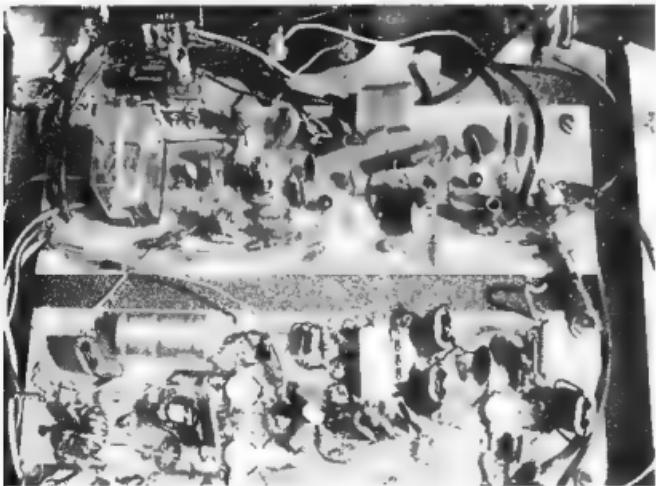
According to RI News of October the Yugoslav Administration has allocated YU and YT for regular use by amateurs and YZ, 4N and 40 for special occasions. YU1 is the prefix for the Serbian Soc Republ c, YU2 for Croatia, YU3 for Slovenia, YU4 for Bosnia and Herzegovina, YU5 for Macedonia and YU8 for Montenegro. YU8 is allocated for SRJ (the amateur radio soc styl) HQ and special stations. The autonomous provinces of Vojvodina and Kosovo use the YU1 prefix. Up till 1974 foreign visitors were allocated call signs in the YU7 series with three letter suffixes, commencing with the letter "K". Now, foreign visitors use their own call signs with the addition of the prefix of the Republic in which they are operating. Suffixes AAA-KZZ are allocated to club stations.

THE Q CODE

Reading a short article in July 1978 QST triggered the thought of how we amateurs use the Q code. Yes, we do use many of the Q signals to indicate a condition rather than strict adherence to the rule book, which says that QRP means "Shall decrease power" and QRM simply means "Decrease power". To us QRP means low power and QRD high power in much the same way that we have adapted the Q code for our own use. In such cases we use QRM-meeting Interference, QRN static and other noise pollution, QSO being a contact QTH a location QSP a message, QRT closing down, QSY frequency change, QRU call again, and so on. These are the day to day practical applications of the Q code which you could hear on any band from anywhere but such answers might not get you many marks in an exam question.



Rear view of transceiver. On the left hand side you simply connect any 16, 23 or 48 channel CB Taxxi. The 80 or 160 Ma antenna is connected to the right hand side.



Inside the 160/80 metre transverter. The top board contains the receiver and exciter circuit. The lower board contains the power amplifier circuit.

A 10/11 METRE DIRECTION-FINDING LOOP AERIAL

Gil Sones VK3AUI
30 Moore St., Box Hill South, 3128

The DF loop is a reasonably simple antenna system which exhibits a figure of eight pattern in the horizontal plane together with vertical polarisation. For receiving purposes it is not necessary to match the very low radiation resistance of the loop. The induced signal voltage is the principal interest and this may be maximised by resonating the loop and feeding the receiver via a high impedance amplifier.

The loop shown in Fig. 1 uses an FET push-pull amplifier, whose output is passed through push-pull emitter followers and a small ferrite balun. During early experiments a dual source FET stage was used, but this was discarded due to its inherent instability under certain tuning conditions. The output of this DF loop is very little less than for a full quarter wave whip.

The loop is constructed from a piece of PT29 75 ohm coaxial cable. The shield of the cable is split in the middle so as NOT to form a shorted turn. The shield forms a Faraday Screen as well as performing as a balanced tuning capacitor. Using 75 ohm coax with its lower capacitance as compared to 50 ohm coax enables a larger loop to be made.

The PT29 is $\frac{1}{2}$ In. OD and is self supporting. To make the loop a length of 3 feet or 1 metre is obtained. The outer jacket is cut back $1\frac{1}{2}$ In. to 2 In. at each end and a 1 In. length is removed from

the centre of the cable. This 1 in. piece must be symmetrical about the middle of the length. Tin the exposed braid, taking care not to melt the insulation. When cool cut away the last inch of tinned braid and polythene insulation from each end of the cable, thus exposing the inner conductor. Rotate the cable under the knife when cutting so as to get a clean even cut. Mark the exact centre of the cable and cut around the circumference so as to remove the centre 1/16 in. of a hacksaw may be used. Be careful not to cut too deeply into the insulation.

A piece of insulating tubing should be slid over the centre and taped in place so as to exclude moisture from the break in the sheath. The loop is now formed into a circle and put aside until the amplifier and its housing have been completed.

The amplifier may be built on either a printed circuit board or a scrap of vero-board or matrix board. The layout should be reasonably symmetrical as the device depends on symmetry to work well.

The loop is tuned by the electrostatic screen and a small trimmer capacitance to give a convenient peaking adjustment. Trimpot R3 in the source circuits of the push-pull amplifier is used to balance the operating point of the two FETs. Earlier versions used twin balanced FETs but the present system is more convenient. Adjust the drain voltages to equality.

The balun is relatively non-critical and a trifilar winding of 7 turns on a small Q2 toroid has been found to be satisfactory.

The amplifier must be mounted in a small metal or plastic box to protect it from the weather. Small plastic soap boxes, diecast boxes or plastic electrical junction boxes are all suitable. The loop is passed through two holes in opposite sides of the case, secured and connected to the amplifier.

When power is applied it should be possible to tune up on receiver noise or on a signal.

In use an attenuator between the loop and receiver is useful as it is necessary to reduce the signal considerably in the final stages of a hunt. Both RF and IF gain controls in the receiver will be found extremely useful.

A simple field strength meter can be connected to the loop for use on the final pedestrian part of a hidden transmitter.

A protractor may be used for direction readout and should be mounted as accurately as possible. An accuracy of

better than 5 degrees is possible — much better than is usually possible on 2 meters.

To obtain sense information and thus remove the ambiguity of the loop bearings, a sense whip should be connected as shown in Fig. 2. This scheme is rather touchy on this frequency and the pattern tends to vary somewhat. The author prefers to take several bearings from different spots and plot them on a map. ■

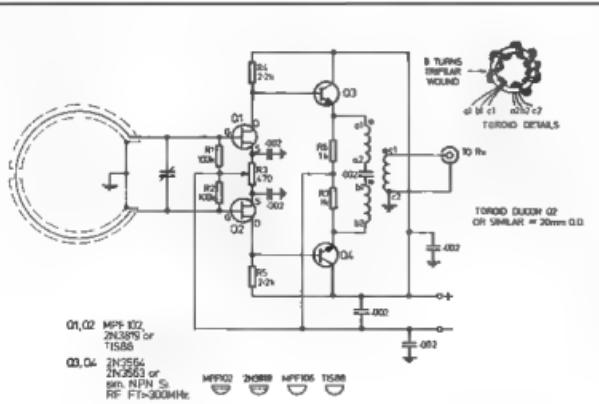


FIGURE 1

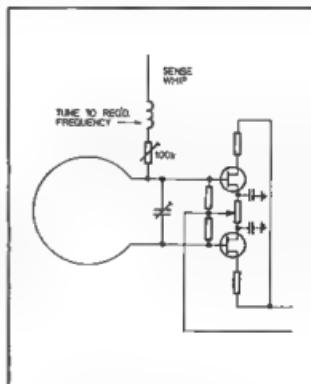


FIG. 2: Series Coupling

AN INEXPENSIVE AMSAT OSCAR 8 MODE 'J' RECEIVER PRE-AMPLIFIER

Many users of OSCAR 8 are discovering that their receiving converters lack sufficient sensitivity (have poor noise figures) to hear the Mode J signals. Most of this deficiency can be overcome with a low-noise pre-amplifier added ahead of the existing receiving converter. Such a unit, which is inexpensive, easy to build and will compete quite favourably with more expensive devices and circuits will be described herein.

PRE-AMPLIFIER DESCRIPTION

This article will not dwell on the AMSAT-OSCAR 8 Mode J output, etc. Suffice it to say that a reasonable 435 MHz antenna gain of 10-15 dB, a feedline loss of 2-3 dB maximum, and a noise figure of less than 3 dB should be sufficient for most operation. A lower noise figure will further improve performance, but a point will be reached when it will no longer be "cost-effective".

The pre-amplifier to be described is an inexpensive version of the "Ultra Low-noise UHF Pre-amplifier" (Ref. 1), a unit which has been used world-wide, especially on 70 cm EME. The original circuit used a \$46.00 transistor which is no longer available but yielded a 1.25 dB typical noise figure with 15-16 dB gain. By making a few small circuit changes, a less expensive transistor can be used. The Motorola MRF 904 costs approximately \$2.00 and in the modified circuit will yield a typical gain of 12 dB with a noise figure of 1.75 dB. The Motorola MRF 901 (and probably the BFR 91) now cost approximately \$1.50 and will yield a typical gain of 14 dB with a similar noise figure. The latter device used to cost between \$6.00 and \$9.00.

Looking at the circuit in Fig. 1, you will note the similarity to the original circuit; the zener diode and biasing, hot carrier diode input protection and the simple matching. The MRF 901 and MRF 904 transistors did not require any input inductor for noise figure matching. By using an output network as shown, the gain on these

devices was increased and the frequency response was shaped for a broad (350-450 MHz) peak response, but with essentially ϕ dB gain at 144 MHz (the original circuit had almost a flat response from 20-450 MHz).

As in the original article, the pre-amplifier should be constructed with the components as shown. Failure to use the hot carrier diode (do not substitute germanium or silicon switching diodes) limiter will increase the noise figure and could lead to destruction from stray RF or electrical discharge. A simplified RF choke is also shown. The 5.0 pF output capacitor is tailored with the 20 ohm resistor and L2 for peak performance at 420-450 MHz and substitution of other values is not recommended if adequate gain and stability are to be attained.

Note the lead configuration on the MRF 901 and 904. Do not ground these devices with extremely short leads. The extra lead inductance as shown will improve stability and input VSWR and will be described in detail in a forthcoming article. Other transistors may be used, but the author will not guarantee similar performance. Don't forget the 0.1 MF bypass on the +12 volt line since it bypasses any stray RF (such as a local HF KW transmitter) which could lead to catastrophic burnout.

Joe Reisert W1JR

17 Mansfield Drive, Chelmsford MA 01824

CONSTRUCTION

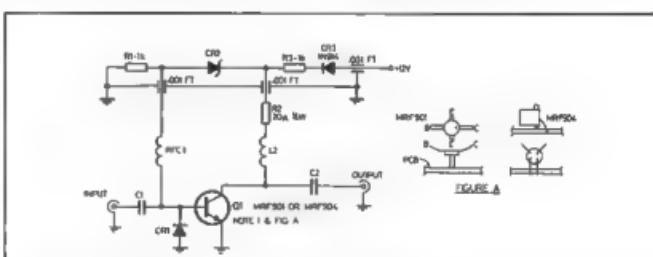
The pre-amplifier should be built into a small (2½ in. x 1¼ in. x 1¾ in.) shielded box such as the Pomona 2417 type. Since extremely low noise figure is not required, BNC coaxial fittings are usable but "UHF" or "RCA Phone Jack" are undesirable. Use of a double-sided printed circuit board held to the box cover with the coax connectors is recommended for construction. Additional details are provided in the original reference.

PERFORMANCE

From the response of those who have duplicated this pre-amplifier, the improvement in reception is overwhelming. Generally speaking, no additional filtering is required. However, if you live in a high RF environment such as UHF televs or transmitter, etc., an input filter may be required and the one in the original article is recommended. Also, never use a power supply which also serves as a source supply for relays since the spikes can destroy the transistor.

One final note: If correspondence with the author is required, an SASE or IRCs with a minimum of questions would be appreciated if an answer is desired.

Ref. 1, "Ultra Low-noise UHF Pre-amplifier", by J. Reisert W1JAA, "Ham Radio Magazine", March 1975.



INEXPENSIVE 70 cm LOW-NOISE PRE-AMP WITH MRF901 OR MRF904

Gain: 12-14 dB typical.

Noise figure: 1.75 ± 0.25 dB.

C1 — 50 pF dipped Mica.

R2 — 20 ohm, ½ watt.

C2 — 5.0 pF dipped Mica.

CR1 — Hewlett Packard 5062-2816 or equivalent.

L1 — Deleted.

L2 — 3T No. 24 on 1/10 in. ID Space Wire

diameter.

RFC 1 — 0.47 uH Nytronics decoupling or 15T No. 32 AWG enamel covered copper wire on 1/10 in. ID Spaced Wire diameter.

Notes:

- Mount transistor as shown in Fig. A with leads just touching PC board (see text).

Reproduced from the "AMSAT News Letter" June 1978.

WICEN OPERATIONS IN SOUTH AUSTRALIA

Ian J Hunt VK5QX
Vice-President/Federal Councillor,
South Australian Division

The VK5 Division has, in common with the other States, for quite a number of years supported and encouraged the activities of the Wireless Institute Civil Emergency Network (WICEN).

This organization is made up of volunteer amateur radio operators who are prepared to make available both their equipment and operating expertise for assistance in any emergency requiring radio communication which may arise in the community.

Needless to say, in implementing a scheme such as this a fair amount of organisation and training of members of the WICEN group is necessary if such a group is to be really useful. To this end training classes in such subjects as message handling procedures, map reading, observation, etc., are carried out from time to time. Regular weekly nets or "call-backs" are also instituted both on high frequency and very-high-frequency channels to keep members in touch and pass on items of interest.

EXERCISES

Some operations within the WICEN group are carried out from home stations, however, when considering the nature of emergencies which are likely to arise it becomes immediately evident that in many cases the requirement exists for portable and mobile operation.

To supplement the previously mentioned training field exercises are arranged as convenient.

Such exercises may take the form of simulated message handling, some times in conjunction with a State Emergency Service (SES) exercise, however it has been found, at least in this State, that members of WICEN react more favourably and feel that they are pursuing a more useful role if the exercise can be allied to a definite purpose.

To this end it has been possible to obtain permission from the authorities within the Postal and Telecommunications Department to conduct exercises as communications support for other deserving community activities such as "The Walk Against Want" and the "Good Neighbour Council" Australia Day Fair which occur annually.

FOREST CAR RALLY

One major event for which we have been able to obtain permission to assist with communications as an exercise over the last two years is a "Forest Car Rally". This event, which covers an extremely large area, provides by its very nature probably the most valuable type of exercise which we can undertake as a WICEN exercise.

This Rally is organised and controlled in the motoring aspects by volunteers from a number of car club enthusiasts around Adelaide, and has come to be recognised as a major event on the sporting car calendar by the motoring public, including in it such well known competitors as Colin Bond, Peter Brock and other leading Australian Rally drivers, plus some overseas competitors. Although the event does receive some sponsorship from commercial organisations it is run on a non-profit basis, costs are kept to a minimum and in fact expenses in staging the events are usually only just covered by the sponsorship obtained. Thus we feel we can still assist such an activity and retain the recognised status of Amateur Radio as not becoming associated with a commercial venture.

The main reasons for the preparation of this article is, however, to describe for your interest the amateur radio activities associated with the support of the Forest Rally as the major item of WICEN exercises held in South Australia. However, at this stage a general description of the event is called for.

The Rally for 1978 covered three distinct stages or Divisions. Division 1, held on the Saturday during daylight hours, comprised a run for the competitors from the marshalling point at the Torrens Parade Ground in Adelaide through the north-eastern suburbs to the Mount Crawford Forest area approximately 50 kilometres north-east of the city. The distances actually travelled were of course greatly in excess of this. Once in the Forest area some extremely tricky and at times even hazardous road conditions were met by the competitors. Thus, whilst the main basis of the exercise was message handling practice by the passing of scoring information, it also provided a readily available communications network should some aspect of safety, accidents, etc., arise during the event. This year conditions were made extremely difficult due to some heavy falls of rain on the days preceding the Rally, resulting in slippery dirt roads, washaways, bogs and surface water on the competitors' route.

Upon completion of Division 1, the cars,

such as were able, returned to the Torrens Parade Ground to then attempt the Second Division to be run throughout the night. This section covered a distance south and valleys of the Le Fleur Peninsula, where the cars again ran into extremely difficult conditions.

Division 3 of the Rally, which took place during the daylight hours of the Sunday, was virtually a repeat of Division 1 so as to "sort out" such of the competitors who may have made it through the first two Divisions without loss of points. This time though such an approach probably really wasn't necessary as none of the competitors could possibly have managed such a feat in the prevailing conditions.

So much for the automobile aspects of this event.

COMMUNICATIONS NETWORK

It can be seen, however, that an event such as this made various demands on the WICEN organisation.

Firstly a communications network had to be set up to cover fairly large distances overall and thus requiring the use of both high-frequency and very-high-frequency stations. Secondly the commitment had to be made to operations extending continuously over a period well in excess of 24 hours. Both these requirements comprise an ideal situation for a major exercise. In some cases installation of equipment at control stations began on the Friday evening, and in the case of the Forest Control Station the operators



In caravan, Steve VK5ZSD at TTY machine. Note paper behind TTY.

camped on site for the whole of the weekend.

Now for a description of the networks involved.

Along the route, as is normal with this type of event, were various check points. On Division 1 there were 10 major check points at which radio communication was required. At these check points operators were stationed equipped with VHF mobile and portable radio to communicate with the net control station located in the Mount Crawford Forest.

The net control station was also equipped with HF radio to provide both a voice and radio-teletype link back to the main organising centre at the Torrens Parade Ground in Adelaide. Included amongst the equipment at this net control were a Model 14 keyboard re-perforator plus Model 15 page-printer for tape preparation, Model 15 page-printer, Model 14 transmitter-distributor, home brew ST6 demodulator with built-in CRO monitor and UART generator, TS520 transceiver with external VFO, and SB200 linear amplifier.



Ian VK5QX with VHF net control.

ANTENNAE

The antennas used were dipoles for 40 and 80 metres with a half-wave vertical antenna on top of one of the masts for 2 metre FM operation. This station was housed in a caravan provided at the site by the rally organisers. The tape preparation equipment was set up in the back of a "Land Cruiser" owned by one of the operators. Power for the station was provided by a 3.5 kVA petrol generator.

Sections of the Rally in Divisions 1 and 3 were to be televised. So as to co-ordinate the movement of competitors through the televised sections a special "TV" net was set up, with all stations using 2 metres FM. This net worked independently of other operations and utilized about five stations with their own co-ordinating control.

Scores from the checkpoints in the main Forest Net were relayed on VHF to the control station from each outlying point and passed by RTTY to the Torrens Parade Ground and in written form to the local Forest Scoreboard, whilst scores for the TV

stages were hand carried to the control station for transmission and also to the local scoreboard.

RAIN, CARS, DIRT ROADS

The operation worked smoothly with particularly excellent results on the RTTY link, nevertheless something adverse always seems to crop up despite the amount of organisation put in beforehand. This time it was not equipment failure, poor communication paths or anything like that. It was also nobody's fault either.

Due to the prior rain, the roads or tracks as they could more properly be called, began to show the effects of the many cars travelling over them. This resulted in many vehicles sliding out of control, becoming bogged and encountering many difficulties, with sections of the course eventually becoming absolutely impassable. One car on one of the TV sections actually turned over completely in the air, landed on its wheels and then kept going, apparently losing almost no time whatsoever. The navigator of said vehicle was heard later to claim that whilst in the air the driver apologised to him, "Sorry about this", and then went to change down in gear before they landed back down on their wheels again. Needless to say, the TV station people seemed delighted with that portion of coverage and replayed that incident time and time again.

The end result of all the problems caused by the wet conditions was to really test the flexibility of the WICEN network and operators. Routes had to be changed, sections closed, check points re-located and the whole system re-established, meantime continuing to provide coverage for the cars still moving. If you had really studied your map reading such capability became most useful during this turn of events.



General view of forest control site

TROUBLE SHOOTERS

Another net which proved most useful was also in operation. This comprised six mobile stations also working on 2 metre FM. Attached to each of these mobile units was a senior rally organiser. These stations were able to act as "trouble shooters" for the exercise and, with extreme care in many cases, to get into and out of locations which needed immediate attention by the organisers.

The southern section of the rally comprised a network of 10 control points manned by radio with their control station also set up for both HF RTTY and VHF FM back to the Parade Ground. In this particular instance some HF communications problems were encountered and the major part of the traffic was conducted on VHF.

This particular case showed up the advisability of using the best possible available antenna when participating in such an exercise. In other words, a full sized HF dipole is much to be preferred to using a compromise antenna such as a loaded whip. It is with this type of incident we learn such things in practice which points up the fact that exercises such as this provide most important training aspects for personnel involved. Nevertheless in this instance flexibility, availability of alternate equipment and frequencies saved the day and the network achieved its purpose in impeccable fashion whilst dealing also with very similar problems due to the road conditions as experienced during Division 1, plus of course the fact that they had to do this throughout the hours of darkness.

Division 3 on the Sunday seemed to be virtually a repeat of Division 1, so not much more is left to be said on that subject, although the network was kept extremely busy with a very large volume of traffic being passed back through the Forest Control station.



Alex VK5CCT makes tape on keyboard re-perforator

MINOR CHANGES

A minor change in the Forest Network did however take place as a number of the check points for Division 3 were manned by Novice operators using the 80 metre band. This was catered for by having a net sub-control operating on both 80 and 2 metres to relay scores back to the main control station. Throughout all of Divisions 1 and 3 there were also two further stations involved. These stations were located at strategic points on the top of hills and were able to act as an "umbrella" to oversee all the nets, thus obviating problems of communication caused by any possible difficult terrain and locations which could crop up due to the hilly type topography of the forest area.

REPEATERS

As well as the networks mentioned some use was made of the two Adelaide VHF

repeaters on each day by net control stations for the purpose of directing operators to their check point positions and establishing the simplex nets. Adelaide Channel 6 repeater was also used throughout the night for the passing of scoring information for Division 2 back to the city.

All in all a large amount of message handling exercise was carried out and the operators obtained most valuable practice in this network operation and discipline and other general field operations which inevitably occur in an event such as this.

SUPERIOR COMMUNICATIONS

Whilst it may not be considered particularly "good form" to mention this fact, we were informed later by the Rally organisers that the communications provided by WICEN were definitely superior to the communications previously provided by a military service unit to support the event.

Thus generally speaking we can be proud of the efforts of our WICEN organisation in this State.

CONCLUSION

I hope that this description of one of our activities has been of interest to you.

Some of the available photographs produced with this article show part of the set up in the main Forest control station.

The large number of operators involved in this exercise precludes the publication of all the call signs and names of such operators. However, it would be most remiss of me if I did not acknowledge the great amount of planning preparation and organising work carried out by John Eastaugh VK5GY, who carried the major responsibility as an Assistant WICEN Co-ordinator for the organising of the exercise. Thanks, of course, are due to all the others who participated in any way.

I also feel sure that, should you wish to participate in WICEN operations within your own Division and join in the fun, at the same time making a worthwhile contribution to both your hobby and the community, your local WICEN Co-ordinator will be very pleased to hear from you.

It does not matter whether you are an HF, VHF, Novice operator or Associate member, you can still make your contribution in some way.

This is yet another worthwhile facet of Amateur Radio which does deserve your solid support. Remember, one day you may be in a position where you might have to handle an emergency, and WICEN can give the opportunity to be fully prepared to do so in an efficient manner. When confronted with such a situation the training you will have received in WICEN will be most valuable. ■

SEANET — THE SOUTH-EAST ASIA AMATEUR RADIO NETWORK

The South-East Asia Radio Amateur Radio Network started in 1964 as an informal gathering on the air of amateur radio enthusiasts in the South-East Asia region for the camaraderie of talking with each other. Meeting daily on 14.320 MHz at 1200 GMT daily, the numbers of amateurs checking into the Net Control Station (NCS) range from Hawaii to East Africa, and from Japan to Australia.

After the South-East Asian amateurs have checked in with the NCS, amateurs throughout the world are given an opportunity to identify themselves to the NCS. Usually there are at least a few from the United States, South America or Europe checking in depending on propagation conditions. And the number of amateurs meeting on the net may range up to 150.

In addition to the ties of friendship fostered by meeting on the network, it also provides a means of testing equipment, contacting friends and if ever needed, emergency communications throughout this part of the world.

The first SEANET convention was initiated by that most indefatigable SEANET regular Big John Van Lear (9M2IR) with his letter of October 21, 1971, inviting the then-Net Controller Paddy Guneskara (457PB) to a meeting in Penang. Some 30 amateurs and guests attended the relaxed informal affair on December 30-31, 1971 — January 1, 1972.

The affair was such a success that it was decided to hold another in Bangkok the following year. This was organised by the Radio Amateur Society in Thailand

and the number of attendees grew to nearly 100. And the third convention was held in Singapore in 1973 and hosted by the Singapore Amateur Radio Transmitting Society.

The amateur radio societies in the South-East Asia region have since taken turns to host this annual eyeball QSO — 4th in Manila, 5th in Kuala Lumpur, 6th in Jakarta, 7th in Bangkok and once again it is the turn of the Singapore Amateur Radio Transmitting Society to play host to amateurs not only from this region but also from all over the world.

Because the main purpose of the annual meeting is to give participants a chance for eyeball QSOs, the programme is usually informal. New developments in communication systems, specific topics related to amateur radio, the communication needs of the region and the place of the radio amateur in meeting these needs are some of the topics on the agenda.

SEANET GUIDELINES

Here are some of the ways in which you, as a SEANET member, can assist the Net Control Station (NCS)

- **NOT** tuning up on net frequency after the net has been called to order, and until the net closes and the channel becomes free.
- **REFRAINING** from checking in under "emergency, medical, urgent or priority traffic" unless a situation really exists. Please do not check in at this time merely to make a contact with another station unless you have a very good reason to do so.
- **NOT** breaking in out of turn. Please

wait for your turn and if it has passed, then wait for "late station or late traffic". This does not apply to any emergency traffic you may have; then call "Break" or "Break, Break" for dire emergency. If you want to call a station that has just checked in, then call "Contact".

- **TRYING** to be on time for your turn. The order of check-ins can vary depending on the NCS and his or her location, but there is usually a set pattern.
- **RESTRICTING** your transmission to essentials only on the net frequency, such as RS, QRU, QRV or traffic as the case may be.
- **ANNOUNCING** at your check-in time if you wish to leave the frequency before the net closes
- **CHECKING** back into the net if you fail to make contact with your assigned station on the assigned frequency. Then call "Check back".
- **CHECKING** back into the net and releasing the assigned frequency to NCS when your traffic is cleared. Say "333 clear", etc
- **CALLING** "Relay" followed by your call sign to prevent doubling when relaying becomes necessary
- **REFRAINING** from asking the NCS to hold your traffic for another day.
- **TRYING** to make all contacts on the net during net time with the help of the NCS only.

Thank you and happy check-ins.
Reproduced from 1978 SEANET Convention Handbook. ■

NOVICE NOTES

BEHAVIORAL OBJECTIVES FOR THE NOVICE LICENSEE

The Novice should be able to

1. Operate legally
2. Tune a rig.
3. Carry on a QSO.
4. Put together a simple station.
5. Show an understanding of common problems.
6. Have some basic familiarity with terminology and equipment common to radio.

To do this he will need to understand:

1. Frequency bands.
Frequency versus wavelength.
Power.
Power relationship with W.I.
CW requirement.
Identification rules and methods.
Logging requirements.
Definitions of control operator, etc.
Definitions of prohibited practices, etc.
2. Meaning of controls.
Meter reading and meaning.
3. International Morse Code.
Abbreviations.
Propagation effects.
Finding a proper frequency.
4. Interconnections.
Antennas and feedlines.
SWR and measurement of relays and TR switches.
Ground and importance of safety concerns.
5. Harmonic radiation and prevention.
Key clicks and cures.
Chirp.
Block diagram of rigs.
6. Ohm's Law.
R, C and L relationships.
Resistors, capacitors, etc.
Tubes and transistors.

Submitted by Graeme Scott VK3ZR,
Federal Education Co-ordinator, from
ARRL Club and Training Department. ■



TEN COMMANDMENTS OF ELECTRONIC SAFETY

1. Beware of the lightning which lurks in undischarged capacitors, lest it cause thee to be bounded upon your back-side in an ungentlemanly manner
2. Cause thou the switch which supplies large quantities of electrons to be opened and tagged, that thy days may be long on earth
3. Prove to thyself that all circuits that radiate and upon which thou workest are grounded, lest they lift thee up to a high-frequency potential and cause thee to radiate also

4. Take care that thou use the proper method when thou takes the measure of high voltage, that it doth not incinerate both thee and the meter; for verily, thou hast no account number and can be replaced easily, the meter doth not have such, and shall bring great woe upon the supply department.

5. Tarry not amongst those that engage in intentional shocks, for they are surely non-believers and shall not be long in this world.

6. Take care that thou tamperest not with interlocks and safety equipment, for this shall incite the wrath of thy seniors, and unleash the fury of the safety officer upon thy head and shoulders.

7. Workest thou not with energised equipment; for if thou doest, thy mates shall surely be buying beers without thee, and thy place at the bar shall be filled by another.

8. Verily, verily, I say unto you: never service high voltage equipment alone, for electric cooking is a slothful process, and thou mightest sizzle in thine own fat for many hours until thy maker seeth fit to end thy misery and draw thee into HIS fold.

9. Trifle not with radioactive tubes and substances, lest thou commence to glow in the instruction books; they give the straight blurb and steer thee away from error.

10. Commit thou the words of the prophets to memory, which are written in the instructions books; they give the straight blurb and steer thee away from error.

From Zero Beat September 1978. ■



LOOK BEFORE YOU LEAP

"Murphy" traps another when converting a CB transceiver to 10 metres!

Recently I decided to convert a Gemtronics 3325 CB transceiver down to 10 metres.

Being in the usual bit of a hurry, I consulted the rather scrappy instruction manual which provided a just readable circuit diagram, together with a comprehensive list of the crystal frequencies used.

The Gemtronics 3325 along with many of the older CB units is not a PLL system, it uses the frequency synthesising mixing system as described in the previous articles in AR of August and September 1978.

A perusal of the crystal frequency chart in the instruction leaflet enabled one to calculate the frequency of the new crystals that would be required.

Altogether I decided to replace the 6 x 11 MHz mixing crystals.

The frequencies listed are 11.000 MHz to 11.250 MHz in 50 kHz steps. These beat with 8 other crystals ranging from 8.1635 MHz to 8.2065 to arrive at the respective CB channels after taking into account the 7.8 MHz filter.

It was a rather simple matter to calculate the required crystal frequency to increase the operation to 10 metres.

A crystal of 12.335 MHz was ordered to replace the existing 11.000 MHz crystal as listed.

I calculated this would allow operation on 28.300, 28.310, 28.320 and 28.340 MHz.

The new crystal duly arrived (at a cost of \$9.00) and was inserted into the relevant socket.

Then Murphy struck! — I had expected the crystal just removed to read 11.000 MHz — but it didn't. It read 11.705 MHz.

The manufacturers had done it again. For reasons best known to themselves they had increased all of the 11 MHz mixing crystal frequencies by 705 kHz from that published.

Likewise, the 8 other mixing crystals had been reduced by the same amount. Naturally, the amendments were never altered in the instruction book!

A sure trap for young players — and the not so young as it appears.

I only have myself to blame.

This item is published to bring awareness to others of the misfortune that may befall you if you don't physically check the frequencies of the crystals in some of these CB sets before ordering new crystals.

The story has an almost happy ending in that I guess "Murphy" also worked in the reverse for me — I only ordered one (1) of the required crystals instead of 8.

Does anybody want to swap a 12.335 MHz crystal for one of 13.040 MHz?

B. Bathols VK3UV ■



LOOKING BACK

Ern Rogers
Rockdale, NSW

In 1933 on a visit to the home of a workmate I spied in a corner of his workshop a strange wireless set in an aluminium case I knew it was a wireless set because three valves could plainly be seen. A vacant socket was also discernible. I asked my friend what kind of wireless it was. "It's a shortwave set," he said, "but it's no good. One of the valves has blown out and I can't get another anywhere."

In the next few weeks that wireless set was constantly on my mind. I could not help wondering what a shortwave set was and how it worked. Why couldn't my friend get the valve he needed? Had he really tried? In these few weeks my mate had been on holidays and as the time

approached for his return I found myself getting excited. I couldn't work out what happened to me. I didn't realise it then, but the bug had bitten me.

On the first night back I met George at the door. I didn't even ask him about his holiday. "Did you ever get a valve for that shortwave set?" I asked him.

"No," he replied, "they're unobtainable. You couldn't find one in all Sydney" "Why don't you sell it then?" I said. He looked at me in disbelief. "Who would buy the blank blank thing?" he asked. "I would," I answered rather too eagerly, "I'll give your a fiver for it."

And so the big deal was made. He agreed to drive over with it at the weekend. But I couldn't wait. I knocked at his

door early next day, fiver in hand. He asked me how I was going to get the set home. I said I would carry it. "You must be joking," said George. "Have a look at it." I spotted the little receiver on the bench, all cleaned up and shining brightly. I was puzzled by the weird contraption beside it. "That's the power supply," I was told. "It weighs a ton!" And I reckoned it did. It consisted of a Philips B eliminator and a 4 volt filament transformer. I decided to let George bring it over at the week-end.

The set duly arrived. My mate explained it all to me. "It's a TRF (tuned radio frequency)," he said, "with a regenerative detector." He wished me luck in finding an E424. I set out early on Monday morn-

ing in my search. Eventually I found a little shop in George Street with the required valve. I was able to get a spare set of the other valves in the set — E424 RF, E424 detector, E415 first audio amplifier and 8406 output. I rushed home and plugged in the missing E424. Once I had learned the intricacies of the reaction control the stations rolled in. This was the beginning of a long period of enjoyment. It was a wonderful experience.

I know it is ridiculous, but I regard it as the finest set ever made. I was sorry to part with it — I sold it for a fiver. One of the E424s burnt out and I couldn't find a replacement.

From Westlakes RC Newsletter, February 1979.

ANTENNA PERMITS (and other non-events) IN S-E ASIA

Dick Goslin VK3SV

The writer recently spent a few weeks in Singapore and Indonesia. The following notes may be of interest to other amateurs considering a visit to these areas.

SINGAPORE

Together with a VK2 visiting Singapore for a Seafar Convention, I spent a pleasant afternoon with Jim 9V1TE, communications officer at the US Embassy. Jim lives in an apartment provided by the US Government, and after prolonged negotiation with local authority received written permission to erect a quad on his penthouse roof. Some time later the authority telephoned to say that a gentleman (?) living nearby had objected to the antenna on aesthetic grounds and that it must be removed forthwith. In view of the permit issued to him, Jim naturally declined to do so. Following a further telephone call from the authority, a working party arrived with a notice of revocation, dismantled the quad and stacked the pieces neatly on Jim's balcony where they still lay at the time of my visit. Jim is now operating with a vertical and keeping his fingers crossed against further "QRN".

David Rankin VK3QV/9V1RH is fully occupied with settling into his new home with XYL and 13 month daughter Sheila, as well as with his increasing business commitments. Due to shortage of time on both sides, we were unable to meet each other on this occasion, but managed a short telephone contact before he left his office to supervise the finishing touches at an electronics exhibition in which his company had a number of stands. David and family hope to spend a few weeks in Melbourne in the near future, his first holiday

in VK-land since transferring to Singapore several years ago.

With no 2 metre facilities available in Singapore such as we enjoy here in Australia, it is not surprising that many amateurs have little knowledge, either personally or on air, of other operators who in some instances may be living only a relatively short distance away by our standards. Of some 50-60 licensed operators in the 225 square miles of Singapore Island, only a small number are active, and as a consequence there is very little marketing of amateur equipment. Except for replacement components such as PA valves, etc., not much is available "off the shelf". I found only one 10-160 metre rig for sale ex stock, and no information was forthcoming about its suitability for use in Australia. Price asked was only fractionally better than that advertised in VK for a similar transceiver.

JAKARTA

About a month before starting our holiday, I had been working Lumbangao YB0WR on 20m. On learning that we would shortly be at Jakarta, he offered to meet us at the airport and spend an hour or so driving us around the city. I explained that as passengers en route to Bali we expected to be confined to the transit lounge and therefore unable to join him. However, we found after completing the usual formalities that we were free to wander as we pleased until shortly before the connecting flight was due to leave some 2½ hours later. As a request for Lumbangao to meet us at

such short notice could possibly embarrass him, we contented ourselves with a phone call to his office. Another non-event, but the transit arrangements at Jakarta may be of interest to amateurs passing through Halim Airport en route to other destinations in Indonesia. Lumbangao's address is Box 4602, Jakarta, and his office phone numbers are 41 4521 and 41 3747.

BALI

No stations on the island of Bali are listed in the 1976 ARRL call book, but a chef at one of the hotels assured us that there are now five amateurs operating from the capital Denpasar, which is midway between the main holiday resorts of Kuta Beach and Sanur Beach, and that he knew one of them personally. This information was received only the day before we left so I was not able to follow it up. The chef is a daily listener to Radio Australia before commencing duty at 7 a.m. He has a better-than-average knowledge of English and attributes this to the assistance he receives from Australia's foreign language service.

ACKNOWLEDGEMENT

Due to some flights being cancelled by the Indonesian authorities, we were required to leave Bali a day before schedule, and at very short notice. Through the co-operation of VK2HH and VK3NJ I was able to inform our family in time for them to meet us at Melbourne airport a day earlier than originally planned. Thank you, Harry and Ken — your assistance was greatly appreciated.

Visiting Hong Kong

LET US ASSIST

WRITE FOR INFORMATION

AMATEURS' PARADISE

Buy from
Queensland's
Stockist

ENJOY HAM RADIO NOW

TS820S	\$139 Deposit
TS520S	\$89 Deposit
ICOM IC701	\$169 Deposit

ALL IN
STOCK FOR
IMMEDIATE
DESPATCH

SOLE DISTRIBUTORS for Queensland of the new BEN LINEAR AMPLIFIERS — Models for all bands — 70-120 watts — all the one price, \$159 — a beautiful unit.

Ask for details of our EASY PAYMENTS PLAN for all gear.

121 NERANG STREET, SOUTHPORT, QUEENSLAND 4215
(Opp. Southport Hospital) Telephone: (075) 32 2644

ALL BRANDS
HF VHF UHF RECEIVERS
ACCESSORIES

Tel. K 38 0606

K 38 3774

**DELTA
COMMUNICATION
SERVICE LTD.**

15 CUMBERLAND ROAD,
KOWLOON-TONG,
KOWLOON
HONG KONG

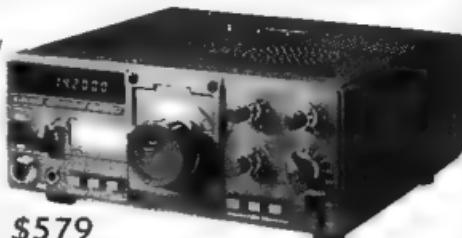


\$225

HF3-100L2 BI-LINEAR
AMPLIFIER

! 250W PEP IN YOUR CAR !

THE IDEAL
COMBINATION



\$579

TS-120V HF TRANSCEIVER



EMOHA electronics

Head Office, Sales & Service: 23 JUNGE ST., RANDWICK 2031. Ph. 398 6378
City Branch: ROOM 208/661 GEORGE ST., SYDNEY 2000. Ph. 212 4815
Cable Address: EMOMA Sydney. A.N. CALL 398 6378

MAIL ORDERS: Box K21, Haymarket
NSW, 2000, Australia
WRITE, PHONE OR CALL IN!



DON'T BE FOOLED IN AUSTRALIA TRIO IS NOT ALWAYS KENWOOD

Although Trio-Kenwood (Australia) Pty Ltd is fully owned by Trio-Kenwood Corporation of Japan, which is the owner of both Trio and Kenwood brands, only Kenwood brand is used on communication equipment imported into Australia through this Australian subsidiary.

Even though they may look identical, models carrying the Trio brand have been made specifically for the Japanese or U.K. markets and therefore may well not meet Australian electrical standards and may contain components not available in Australia. Such models are not imported by the manufacturer's Australian company and so are not eligible for warranty servicing by that company.

So beware — make sure your communication's rig is bought from an authorised Kenwood dealer, carries the Kenwood brand and is backed by the manufacturer owned importer Trio-Kenwood (Aust) Pty Ltd., 30 Whiting Street, Artarmon, N.S.W. 2064.

TRIO-KENWOOD (AUSTRALIA) PTY. LTD.
31 Whiting Street, Artarmon, Sydney, N.S.W. 2064. Telephone (02) 438-1277

Interstate Distributors:

VIC: V COM IMPORTS PTY LTD (03) 699-6700 • QLD: MITCHELL RADIO CO (07) 57-6830

• S.A. & N.T.: INTERNATIONAL COMMUNICATIONS SYSTEMS PTY LTD (08) 47-3688 • W.A.: WILL'S TRADING CO (09) 321-7600
• TAS: ADVANCE ELECTRONICS (003) 31-5688

PLUS MANY OTHER REGIONAL OUTLETS THROUGHOUT AUSTRALIA

TO COMPLEMENT OUR USUAL RANGE OF CRYSTALS

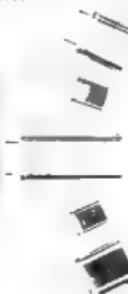
BRIGHT STAR CRYSTALS

PTY.
LTD.

35 EILEEN ROAD, CLAYTON, VIC., 3168
Phone: 546 5076 (Area Code 03)
Telex: AA 36004

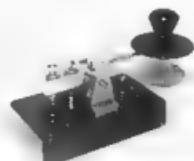
CAN SUPPLY A RANGE OF —

- OSCILLATORS
- WIDE-BAND AMPLIFIERS
- TTL & CMOS
DECade Counters
- ELECTRONIC CRYSTAL
OVENS



AT LAST!

THE TYPE 610 BRITISH
POST OFFICE designed
MORSE CODE KEY



There has never been a better designed Morse Code Key — SOLID, ROBUST and BEAUTIFULLY BALANCED

\$25.00 (Post Paid)

"LEARNING THE MORSE CODE" —
Cassette Album Training Course will progress rapidly using this modern training system

PRICE \$20 (Per Album of 3 Cassettes)

INTERSTATE AGENTS:

Adelaide: ROGERS ELECTRONICS — Phone 42 6666
Brisbane: FRED HOE & SONS PTY LTD — Phone 47 4311

Perth: WESTEST — Phone 337 6393

Hobart: DLMOND INSTRUMENTS — Phone 47 9077

All Mail to be addressed to: P.O. BOX 42, SPRINGVALE 3171

WILLIAM WILLIS & Co. Pty. Ltd.
27 CANTERBURY ROAD, CANTERBURY, VIC. 3216
PHONE 835 0797

SOME SPECIALS

FROM BAIL ELECTRONIC SERVICES

Please note that some items are in limited quantity, so—don't delay, they won't last forever!

FT-101E AC-DC HF Transceiver \$795
FT-101E AC HF Transceiver \$745
101E DC-DC Conv. Kit \$70

N.B Our 101E Transceivers still include the superb "B" Model adjustable Noise Blanker PB 1292, exclusive to us! The N.B that really does work. And for those with the PB 1582 N.B we can supply the 1292 at \$42, plus postage \$1.50

The above list is not complete. There are many more items available. Contact us for your requirements.

Above prices (RR) inc ST Freight is extra. Prices and specs. subject to change. 90 day warranty on sets excluding power valves and power transistors. Full service facilities and comprehensive range of spares.

All items new, ex stock at time of advt preparation except FRG-7 and FRG 7000, which are due into store approx end of April.



ELECTRONIC SERVICES

50 Shannon Street

20 Shattock Street,
Brentford, Middlesex, TW8 9AS

BOX HILL North.

Phone: 89 2213

EBED BAI VK3VS

www.wwu.edu

VHF PROPAGATION BETWEEN ALBANY AND ADELAIDE

C. J. Hurst VK5HI
K. G. McCracken VK2CAX

This is a report of the analysis of a portion of the project ASERT data for January 1979. These data are singled out for immediate analysis since they demonstrate, very clearly, some phenomena of immediate practical importance to the VHF amateur.

Figure 1 displays the signal strength of the 144 MHz Albany beacon, VK6RTW, as received at Adelaide on 27/1/79. The data was received at the QTH of VK5HI, using a TS.700A receiver, and a ten dB gain yagi at height of 15 metres. The voltage across the signal strength meter of the TS.700A was recorded on a rustrak chart recorder, running at 25 mm per hour. The strongy fluctuating nature of the signal, with periodicities ranging from less than one minute to the order of an hour, is clearly seen.

Figure 2 is derived from the data such as Figure 1, and summarises the state of the Albany to Adelaide path at 144 MHz throughout the period 20/1/79 to 27/1/79. The solid histogram gives the peak signal received in Adelaide during each hour, while the graph plotted below the histogram gives the percentage of that hour that the circuit was inferred to be open for SSB operation (see below). Note that this latter graph is plotted upside down.

About 0700 GMT on 22/1/79 VK6OE worked VK5NX in Adelaide via the VK5 repeater, VK5RHO. The beacon signal on the recorder chart for that time was 0.17 uV RX input voltage. Assuming that this signal strength on the beacon recorder represented the threshold for a FM contact between Albany and Adelaide (this assumption will be discussed later), Figure 2 (and the data for 28/1/79) shows that the beacon exceeded this threshold during each of 44 different hours during

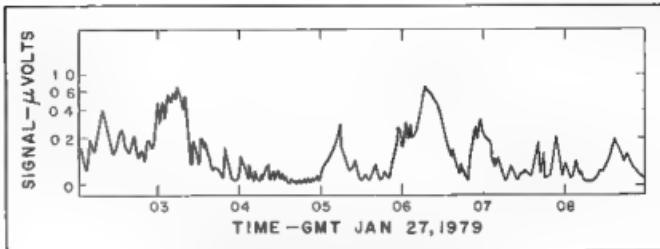


FIGURE 1: A copy of the rustrak record of the 144 MHz Albany beacon as received in Adelaide on 27/1/79. The wedge on 22/1/79 indicates the occurrence of a FM QSO between VK5 and VK6.

the nine day period under study. That is, we infer that the Albany to Adelaide path was open for FM for 20 per cent of the hours during this interval.

The path gain for SSB is some 4 dB greater than for FM on account of the narrower bandwidth. This suggests that 0.1 uV at the beacon receiver would be a suitable indicator of the threshold for SSB communication. Figure 2 shows that the beacon signal exceeded this threshold during 90 separate hours; that is, the path was open for SSB for 42 per cent of the hours in the 9 day interval under study. (Note, however, that for many of those hours the path was only open for 10 to 20 per cent of the time.)

Table 1 lists the number of hours in the total 9 day period for which the beacon signal exceeded 0.1, 0.17, 0.27, 0.42 and 0.63 uV in Adelaide. (These rather strange values correspond to the major scale divisions on the rustrak chart.) It shows that the strongest signals, and the most prolonged openings occurred on the 21st, 22nd, 26th and 27th of January. Table 1 also shows that these four days were precisely those for which a major atmospheric

high was situated in the Great Australian Bight, between Albany and Adelaide.

The above correlation is well known to VHF operators. Perhaps of more interest is the fact that the path was open, briefly, on every other day in the period under study. Figure 2 shows that these openings, however, were very brief and tenuous. Consider 25/1/79 as an example. If the path were open during an hour, it was usually only for from 10 to 20 per cent of the hour. The detailed chart records (similar to Figure 1) shows that this 10-20 per cent was made up from many short-lived intervals of from 1 to 2 minutes duration, the signal barely exceeding the inferred SSB threshold on each occasion. The path was open, but only just!

The data from Table 1 have been plotted in Figure 3 to demonstrate the dependence of "hours open" upon a signal threshold. This graph provides great insight into the properties of VHF communication at these ranges, and is discussed in detail in the following paragraphs.

Table 2 interprets Figure 3 in terms of normal amateur practice. A less efficient receiving antenna, increased cable loss, reduced height gain, or an increased receiver noise figure could all reduce the reception gain below that used for these tests. Reductions of 3, 6 and 9 dB are

TABLE 1

The number of hours for each day in the study interval for which the peak signal exceeded five reference levels. "Yes" in the last row indicates the presence of a pressure high between Albany and Adelaide

Threshold (uV)	20	21	22	23	24	25	26	27	SUM
0.1	1	18	12	6	6	9	16	21	1
0.17	1	9	4	1	1	2	7	19	0
0.27	0	4	1	1	0	0	4	15	0
0.42	0	2	0	0	0	0	3	12	0
0.63	0	0	0	0	0	0	0	2	0
Pressure High	Yes	Yes				Yes	Yes		

TABLE 2

Gain (dB) Reception	Transmission Gain
-5	0
-3	11%
-6	7%
-9	3%
	42%
	26%
	17%
	42%
	11%
	26%

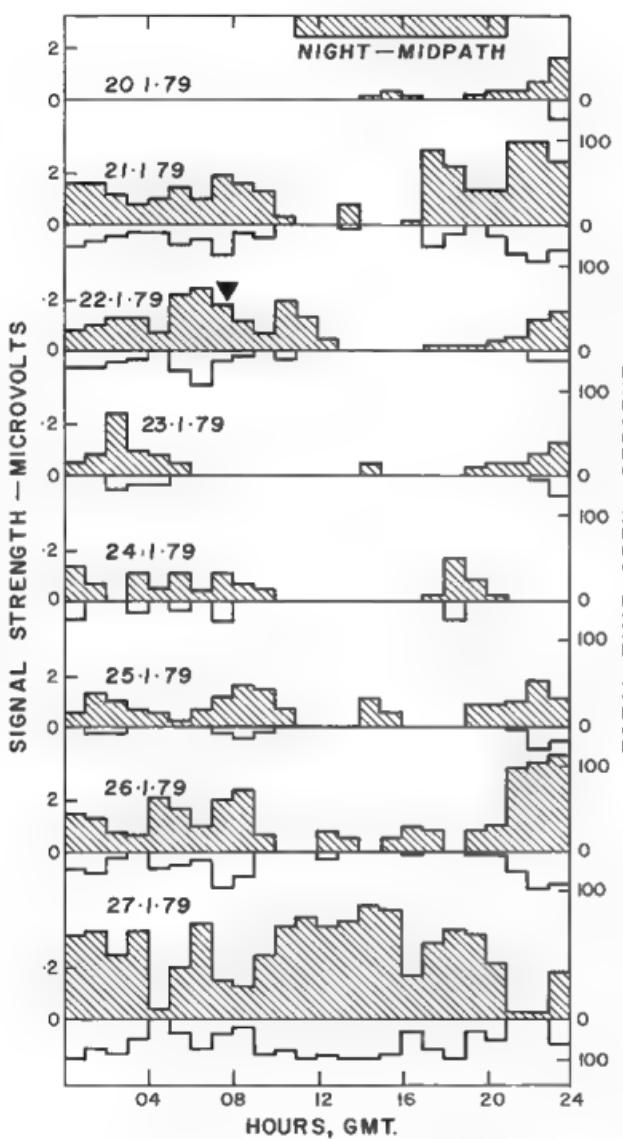


FIGURE 2: The peak signal strength for each hour, and the fraction of that hour for which the Albany-Adelaide path was inferred to be open for SSB.

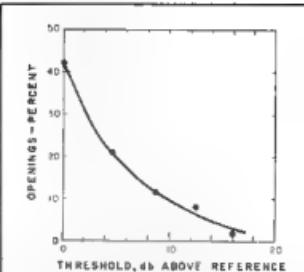


FIGURE 3: The manner in which the number of hours for which the Albany-Adelaide path was inferred to be open for SSB, against receiver threshold.

taken as representative of that which might be met in practice.

Transmission gain can vary because of greater, or less power, different antenna gain, increased cable loss, or different height gains. Gains of +6 dB and -6 dB are taken as indicative of current practice relative to the Albany beacon.

From Table 2 it is clear that the ability to communicate depends extremely strongly upon the gain parameters at each end of the path. Thus Table 2 shows that "normal practice" could have resulted in frequencies of communication varying between 3 per cent and in excess of 42 per cent during the study period. It is sobering to remember that it is relatively easy to "lose" 6 dB in a receiving installation (e.g. 2 dB in the antenna, 2 dB in the cable, and 2 dB due to a higher than optimum noise figure, each of which appears relatively trivial) and yet the overall penalty is great (17 per cent versus 42 per cent). Stated differently, a few dB improvement in either transmission or reception gain results in major improvements in communication efficiency.

The scientific facts in Figure 3 belie the common belief that "when the band is open on VHF, anything will get through".

An important goal of project ASERT will be to determine the extent to which the inferred performance figures in Figure 3 actually relate to the amateur experience. In doing this we will be able to correct any errors made in our assumed thresholds for FM and SSB communication. To this end, project ASERT requests that any SSB or FM operators that worked the Adelaide-Albany circuit on 144 MHz in the period 20-26/1/79, provide the details of your contacts to Project ASERT, Box 150, Toorak 3142. Please give date, time (GMT), station worked, mode, RS and your estimated power output and antenna type.

REFERENCE

- (1) R. C. Arnold, "Amateur Radio", 47: No. 2, February (1979).

THE IMPORTANCE OF AMATEUR REPRESENTATION AT WARC 1979

The following article is reprinted with acknowledgements to the EMDRC Radio Bulletin for March 1979 as the contents deserve wide publicity. The article was written by Jack O'Shannassy VK3SP.

"A short time before Christmas the Australian delegation to the Special Preparatory Meeting (SPM) of the World Administrative Radio Conference, 1979 (WARC), returned to Australia. The delegation had spent four weeks in Geneva, towards the end of the European autumn, and were glad to be back to the warmth of Australia. Under the leadership of the First Assistant Secretary P and T. Department (Mr Jim Wilkinson) the 15 man delegation had been more than busy putting the views of Australia as contributions towards the production of a Technical Report which will be a very important input document to the WARC which commences in September, 1979.

A notable 'first' for this delegation was the inclusion of an Amateur as a full time Delegate. Because of the difficulty of obtaining the necessary time for their normal occupations, the work was shared by two people — David Wardlaw and Michael Owen. In the past, Amateur involvement in international delegations of this nature has been confined to the production of briefing documents only, or, on rare occasions, to the presence of an Amateur as an Observer.

Representation of the Amateur Service in the Delegation by a full time Delegate on this occasion is due partly to the balanced outlook of Jim Wilkinson, who accepts as desirable the representation of non-Government frequency users and partly to the availability of Amateurs with the energy and ability of Michael Owen and David Wardlaw, and, just as important, their availability to attend the many preparatory meetings and drafting sessions over a period of many months.

TECHNICAL VIEWS IMPORTANT

It is tremendously important to have technical views which you wish to be used as the basis for decisions of WARC agreed to in the SPM and printed in its Report. It is only in the comparatively technical atmosphere of the SPM (which is *not* a frequency allocation conference) that technical arguments can be put and may be accepted in a more logical engineering climate.

At the WARC itself many other factors — particularly those of an economic social and political nature — are balanced against the purely technical considerations. The fact that the SPM Report contains almost all of the views which Australian Amateurs consider to be important



Michael Owen VK3KI, Jack O'Shannassy VK3SP and David Wardlaw VK3ADW discuss WARC problems.

Photo by Bill Rose VK3ZMI

is a tribute to the preparatory work in Melbourne and the work in Geneva of our joint Delegates.

Although many nations at the Conference expressed an interest in the Amateur aspects of the SPM, in the event only three nations made a written input — USA, Canada and Australia. In almost every aspect of radio technical matters in the ITU arena the Australian input has a particular significance. When considering our small population this may seem surprising. The reason why the Australian view carries so much weight in Geneva is due to a combination of factors — some political, such as our non-alliance with any major political power, some technical, in that Australia despite our small population is regarded as technically advanced in communication technology generally, and some commercial. In that there is no large nationally supported radio manufacturing industry in this country.

In addition, because of our small population, our views are often accepted by other small nations, and, because of our low population density and large distances, our technical approach to communication problems generally is more allied to the problem of lesser developed nations. We also have the advantage of speaking English as our mother tongue. Although French is the language which prevails in the event of a dispute in the ITU, English is the main working language and the language used by the majority of nations attending.

PREPARATORY WORK

Success at a conference such as the SPM requires more than active participation in

Geneva. It requires a large amount of preparatory work in Australia leading to the preparation of the official Australian Brief, and in particular, it requires the preparation of Input Documents which are clear, technically sound, generally acceptable to a wide range of nations, and worded so that their message is clear and unambiguous. In this regard it is significant to note that many of the agreements and recommendations contained in the Report of the SPM were taken almost word for word from the Australian Input documents. This is a tribute not only to our delegates in Geneva but also to the dedicated group of Amateurs working behind the scenes who helped in the preparation of our input documents.

The main issues of concern to the Amateur Service in the SPM Report came under the following headings.

- The appreciation of the nature of the Amateur Service.
- Recommendations concerning frequency bands below 30 MHz.
- Recommendations concerning frequency bands above 30 MHz.
- Recommendations concerning the Amateur Satellite Service.

The wording of the Report concerning the nature of the Amateur service is very much to our satisfaction. The recommendations concerning the needs of the Amateur Service for bands below 30 MHz contain recommendations which we considered of importance, e.g., additional frequency bands in the vicinity of 10, 18 and 24 MHz.

The only notable exception is the absence of a recommendation concerning the

proposed new low-frequency band in the vicinity of 160-180 kHz. The recommendations for frequency bands above 30 MHz in general agree with the Australian view, both as to bands and the desirability of wider bands in some cases which could be shared with the Radiolocation Service. So far as the Amateur Satellite Service is concerned, the recommendations are very close to our views.

Although the SPM is a 'preparatory meeting for WARC' this should not be taken to mean that it was small or unimportant. Over 750 delegates attended, representing 85 nations. Fifteen special organisations attended (including the IARU) and 30 private operating agencies were also represented. A total of 368 input documents were processed.

By comparison, the WARC will have representatives from about 140 administrations with more than 1000 Delegates. It is expected that there will be more than 1000 input documents which represent a tremendous amount of paper to be processed and information to be absorbed by the Delegates attending.

TEN WEEKS CONFERENCE

The WARC, which commences in September, runs for 10 weeks into November. This is a very long period for a conference of this nature, taking account of the climate in Geneva at that time of the year

and the very heavy pressures which will be exerted on the Delegates from smaller nations such as Australia. The timetable for conferences of this type is essentially set by the nations with the larger delegations, e.g., USA, UK, USSR and, as a result many simultaneous meetings result.

As the Conference progresses, the work tends to spread into the evening hours and occupy part or all of the weekends. These extended hours, together with the necessity for daily Delegation co-ordination meetings and the preparation of additional input documents, and the very cold climate (in Australian terms) combine to put a heavy load on all of the Australian delegates.

Whilst there is an excellent degree of co-operation and sharing of workload amongst the Australian Delegates, it is clear that the Amateur service case is best put by the one Delegate at WARC (David Wardlaw), the combination of long working hours and the cold climate raises the possibility of him being unavailable at some stage due to illness. It would be very desirable if the Amateur service could have a second representative to cover this possibility and also to help in the presentation of the Amateur case generally.

The availability of another Amateur Delegate however, involves a very considerable cost and raises the problem of finding a suitable person with the appropriate back-

ground and the necessary time to attend the preparatory meetings over a period of many months before the Conference, and whose business will allow him to be absent overseas for 10 or 11 weeks without salary.

TECHNICAL AGREEMENTS NECESSARY

Without the necessary technical agreements reached at the SPM, the Amateur Service would have an almost impossible task at the WARC. However, success at the SPM does not automatically mean success at the WARC. The comparatively calm technical climate of the SPM will be replaced by an actively political climate at the WARC and many nations who had little to say during the technical discussions at the SPM may be much more vocal at the WARC.

ACTIVE OPPOSITION

Although there is evidence of a more widespread support for the Amateur Service in recent times, there are still quite a few countries which actively oppose the Amateur movement. There is no doubt that the spectrum available to Amateurs over the next 20 years will be dependent in no small measure on the efforts of the Amateur Delegate in the Australian Delegation to WARC 1979 and on the support he gets in the preparations for that Conference."

EQUIPMENT REVIEW:

THE ETO ALPHA 76 PR LINEAR AMPLIFIER

Ron Fisher VK3OM

This is the first time that a linear amplifier has been the subject of a review in this magazine and it was initiated when James Goodger of Australian Sound and Signal Research offered one of ETO's Alpha 76 PRs for our appraisal.

These amplifiers are made in the USA by Ehrhorn Technological Operations Inc, of Canon City, Colorado. ETO have built up quite a reputation over several years in the production of linears and the 76 PR is representative of their current production.

Naturally as these units are designed for use in the USA they are rated at power levels well above the Australian maximum output of 400 watts PEP. Before putting the 76 on air, I rang the local Radio Branch to check on the legality of using such a unit. It appears that so long as the PEP output is kept at 400 watts or below that all would be OK. However, it was stressed that the onus was on the amateur concerned to prove this to the department in the event of an inspection.

In view of this it might be a good idea to look at the specification of the Alpha 76 PR.

Frequency Coverage: 1.8-2.0 and 3-30 MHz.

Plate Power Input: 3kW PEP and typical RF output to 2kW PEP. CCS Input 1 kW average or key down.

Drive Power: Nominal 100 watts PEP, 60 watts carrier.

Input and Output Impedances: Nominal 50 ohms resistive, unbalanced; VSWR 2:1 or less.

Distortion: Third order IM more than 30 dB below 1 kW PEP output.

Harmonics: More than 50 dB below mean fundamental frequency output.

Tube Complement: Three Elma 8674s ceramic-metal grounded-grid triodes.

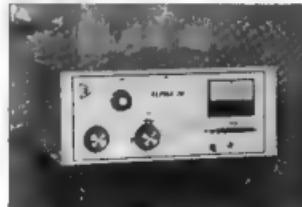
Cooling: Full-cabinet, ducted forced air; centrifugal blower.

ALC: Adjustable threshold, negative-going standard as shipped.

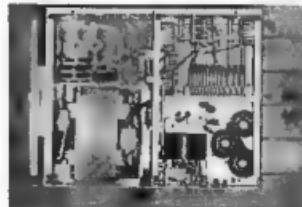
Protection: Primary fuses, plate overcurrent relay, AC and HV interlocks.

Primary Power: 240 volt at 10 amps or 120 volts at 20 amps nominal. 50/60 Hz.

Size and Weight: 7.5 in. high, 17 in. wide, 14.75 in. deep, and shipping weight 75 lb. Well so much for the figures, let's take a look at the amplifier both inside and out.



Alpha 76



What is inside the Alpha 76

First one point is that the 76 PR is a special model with three tubes in parallel. The standard 76 has two and is rated at a mere 2.5 kW PEP input. However, as the power supply is the same for both models the average power input remains the same.

It should be noted though that the particular 76 PR imported by Australian Sound and Signal Research is fitted with an extra

heavy duty power transformer and power supply section. However, apart from this information there is no specification on the difference between this and the standard supply.

Reference to the illustration reveals that the 76 PR is a handsome but large unit. Both the cabinet and front panel are of heavy plastic covered aluminium with a smooth ripple finish.

The row of push buttons under the meter select the various meter functions. These are High Voltage, Grid Current, Plate Current and Forward and Reflected Power. Under these again are the AC on switch and the SSB/CW TUNE switch. The AC switch is spring loaded and it is only necessary to push it down momentarily then release to lock in the AC switching relay in the power supply.

As most of the overall weight of the unit is in the power transformer, this is shipped in a separate package to the amplifier and is installed by the owner. The reason for this is obvious when the smallish box containing the transformer is picked up, and then immediately put down again to get a better grip. Installation of the transformer is, with the exception of the weight, an easy job. The side panel comes away with the removal of several screws, the transformer is bolted in and the electrical connections are completed with two pairs of multi-pin plastic connectors. The above procedure is fully explained in the excellent instruction book.

Interior layout and construction is quite superb. Liberal use of ceramic stand-offs, a large silver plated coil for the higher frequency bands with large toroids for the lower bands. It is interesting to note that the input is untuned but a balun is provided to give an optimum impedance match into the three 8874s. The centrifugal blower draws air from the outside around the power transformer, past the tubes and up through rubber tubes to three outlets in the top of the cabinet.

Both the tuning and loading controls are operated via smooth reduction drives and a 0-100 scale is provided for logging on each. It is interesting to note that the models sold in the United States no longer include the ten metre band. Apparently quite a large percentage of linear sold were going into the CB market, so the elimination of ten metres is calculated to overcome this.

On connecting the Alpha to the driving transceiver our first criticism was brought to light. The input connector is nothing more than a phone type socket. Why not a BNC or even another SO-239? As there is no way to lock a phone plug in this would have to be considered non-professional. I know that these connectors are common in American made gear for RF purposes but in a unit of this class is somewhat out of place.

Safety interlocks are provided on both the high tension and AC lines. Should the amplifier top cover be removed for in-

spection, the HT would immediately be shorted to ground and the primary AC voltage removed. Even the forgetful expert is therefore protected.

Plugging in the AC cord and switching on brings our second (and final) criticism. The blower system is very noisy. Not only that but there is also a degree of rumble which is transmitted into the desk or table on which the unit is sitting. Perhaps blower noise is a subjective thing that might bother some people more than others, but if I were using an Alpha I would want it on a separate table several feet from the operating position. At initial switch on, the meter is illuminated red and it is necessary to wait for the delay circuit in the power supply to operate before tune-up is commenced. Delay conclusion is signalled by the meter illumination turning green. A front panel switch selects either high or low voltage for tune-up CW or for SSB operation. For Australian conditions the low voltage setting should be used at all times. However, here comes the problem. Tune-up requires the amplifier to be run at an input of 1 kW and so the use of a dummy load is mandatory. An accurate RF power meter and a monitor oscilloscope are also required equipment.

SWITCHING

Switching the amplifier to "transmit" is by shorting the operate line to ground. This is normally done by a relay connection in the driving transceiver. In the non-transmit situation, the antenna is connected through for normal receiver operation.

Well, just how does one check out a 2 kW output linear at 400 watts output? Two things can be said right away. The amplifier runs stone cold at all times and distortion products are much further down than the specified -30 dB. This of course assumes that the exciter is clean.

However, when using modes other than SSB it is necessary to run the amplifier at a maximum of 150 watts input to comply with local regulations.

Unfortunately I do not have access to a spectrum analyzer, but reference to a QST review of January 1978 indicates that the third order distortion products are around 40 dB down on full PEP output so one can expect at least this figure at 400 watts. When one considers that some of the older transceivers using sweep tube circuits are struggling to reach 20 dB down, some idea of the Alpha's performance can be seen. For our on-air tests the 76 PR was driven with a Kenwood TS-820 transceiver and the output taken via a Drake W-4 wattmeter and a Heath SB-610 monitor scope. A Heath Centenna was available for high power testing. With everything running full on, just on 1700 watts carrier was delivered to the Centenna. ETO make quite a point in their advertisements that you can put a brick on the key and hold the power output at full steam indefinitely. I am sure the 76 PR would take it but the Centenna certainly would not. Under the

same conditions PEP output as indicated on the scope was around the 2000 watt mark.

Provided that the drive level was kept constant, the output from the Alpha remained essentially constant from band to band.

Bringing things back to 400 watts for our on-air tests only requires the exciter to deliver about 30 watts PEP. A check with a local station showed that the 400 watt output signal was in fact slightly cleaner than the TS-820 running alone at full power. Perhaps a run down on the method of checking this might be of interest. With the TS-820 and a few other transceivers, it is possible to switch to the opposite sideband without changing frequency. This means that the strength of the unwanted sideband can be read on the "S" meter. Now it follows that the reading will be the product of two things, the unwanted sideband and the distortion products of the transmitter. Naturally, too, the sideband rejection of the receiver also comes into it. However, assuming a good receiver filter and transmitter sideband suppression of 40 dB or better, the thing that will show up is the distortion products of the transmitter. If the calibration of the receiver "S" meter is known then the distortion can be checked with fair accuracy.

The instruction manual is well written and contains all the information needed to use and possibly service the Alpha. The only thing missing is a printed circuit board layout in the power supply section.

SERVICE

In so far as service is concerned, I will quote from the covering letter received from James Goodger. "As a normal pre-delivery check we operate all our amplifiers on all bands 160-10 metres checking power output, making sure there are no problems after the journey from the USA. By doing this we have no problems with any amplifiers that we have sold. To hand is also a fully equipped workshop, and our 24 hour order number (02) 367756 ensures that an electronic engineer will answer any technical queries as soon as he starts work. Both our engineers are extremely familiar with Alpha. Dick Ehron Products, as both have had considerable time in the factory with Dick, enabling them to often pinpoint problems over the phone."

Well, just where does an amplifier of this type fit into the Australian scene? Perhaps this is a bit like saying where does a Porsche sports car capable of 250 kilometres per hour fit into our restricted speed limits? In other words there is more to it than sheer speed in a car and perhaps power in a linear amplifier. However, there is also no doubt that both take expert handling. For further details on price and delivery, all enquiries should be addressed to James Lindsay Goodger, c/o Australian Sound and Signal Research, GPO Box 5076, Sydney 2001, NSW, or telephone (02) 367756.

"WOODPECKER" BALONEY OR WHAT?

Alf Chandler VK3LC
Federal IW Co-ordinator

Although the USSR has indicated that the P0 pulse signal has been minimised it still bugs all Amateurs throughout the world.

The screed published below has been received at this QTH from three separate sources:

"From the West Coast DX Bulletin, 14th February, 1979.

THE RUSSIAN WOODPECKER

If you have not heard this one, you have not been on the air in the last year or two. Like a lot of other things, you try to live with it and wish it would go away but it seldom does. Maybe if you know a bit more it might help to tolerate the continuing burden. The following information compiled by W3... "

The 'woodpecker' is a long range radar and the range can be estimated by noticing that the repetition corresponds to 25 w.p.m. CW dots. At this speed, the time from dot to dot is 98 microseconds and this means that the radar range is roughly 47,000,000 feet or 8950 miles. This 'on-the-air' estimate was done w/out instruments so it is probably a bit in error. If the actual design range was 15,000 km or 9320 miles, the error in the estimate would only be 4 per cent.

Presuming a 10 megawatt source and 18 dB of antenna gain, the ERP is 88 dBw. However, if you figure twenty metres at 1000 miles, this immense signal is reduced by path loss to a mere 0.0006 watt.

This might make some think that a 1 watt jammer would have an advantage over the woodpecker of over 1000:1 but this is not correct. Not all of a jamming signal will be effective unless it is able to pass through the IF and Video filters of the radar. A constant carrier is not effective at all because it is rejected as a DC level by the AC coupled video circuitry of the radar.

However CW dots will get through, this assuming a rise time of 1 millisecond for amateur CW, and an additional 20 dB advantage is given back to the radar because of the mis-match in rise time, Video bandwidth and corner frequency. Notice that the CW dot jammer, even if only 1 watt, still has a 10 to 1 advantage. It might even be that a 100 watts or 1 kW would be even better.

There is some reason to believe that the above is true. For one thing the woodpecker is only heard on the phone bands where voice envelopes can be rejected by the radar video circuit. Also, when someone is sending CW dots at 25 w.p.m. the

woodpecker usually QSYs within five minutes.

Some who have studied the situation have noted that persistent CW sending on the woodpecker frequency has had them go QRT, one instance it lasting for about three weeks, returning with a new gimmick. The woodpecker showed with a frequency hopping mode. If problems developed, the woodpecker would hop to some other frequency on the amateur band.

However, the woodpecker must have an IF bandwidth of 20 kHz in order to process the 100 micro-second pulses that they transmit and thus there are not many such hops possible within one ham band. Observation tends to reinforce this thinking, only about eight operators sending dots at 25 w.p.m. spaced 20 to 30 kHz across a band would eliminate the advantage gained by the frequency-hopping technique.

Son of a Gun! This is high level technical stuff and we did note that deliberate jamming might not be exactly kosher. One bright type came back with the information that he had heard on two metres that H5HHH was on from Baja Bophuthatswana and that he was calling him but having trouble counting all of those dots. A likely story!!!

Is the above interesting to you? I found it so. From K6WM.

Do you think the above baloney, as "experts" in New Zealand seem to think, OR WHAT?

And, by the way, my QTH after the first week in May will be as follows:—

Alf Chandler VK3LC, 15 Point Avenue, Beaumaris 3193.

AMATEUR SATELLITES

Bob Arnold VK3ZBB

OSCAR 7

Still working on occasions, generally on Mode A unless commanded on to Mode B. Telemetry is garbled.

OSCAR 8

Working well on all Modes. Mode J on Saturday, Sunday and Wednesday; Mode A at other times.

RS

Telemetry working on both RS1 and 2.

My only record of the transponder being ON is orbit 1492 on 27 Feb.

RS2 power supply is having some difficulties due to excessive radiation effects.

PHASE III

Scheduled for launch on 3rd March, 1980.

AMSAT

Seems to have forgotten Australia — no newsletter received since June 1978 — so much for our interest and past record

ORBIT PREDICTIONS — MAY 1979

OSCAR 8				RUSSIAN RS.1			
Date	Orb. No.	Eqa X	Eqa Y	Orb. No.	Eqa X	Eqa Y	Eqa Z
1	5877	0039	54	2207	0159	172	172
2	5891	0044	55	2247	0114	172	172
3	5905	0049	56	2258	0118	176	176
4	5919	0054	58	2271	0123	178	178
5	5933	0100	59	2283	0128	181	181
6	5947	0105	60	2285	0132	184	184
7	5961	0110	62	2307	0137	186	186
8	5975	0115	63	2319	0142	189	189
9	5989	0120	64	2331	0147	192	192
10	6003	0126	66	2343	0151	196	196
11	6017	0131	67	2355	0156	197	197
12	6031	0136	69	2367	0160	197	197
13	6045	0141	69	2379	0205	175	175
14	6058	0093	45	2390	0310	178	178
15	6072	0068	48	3402	0314	179	179
16	6085	0013	47	2414	0319	181	181
17	6100	0019	48	2426	0324	183	183
18	6114	0024	50	2438	0329	195	195
19	6128	0029	51	2450	0333	199	199
20	6142	0034	53	2462	0338	192	192
21	6156	0039	54	2474	0443	194	194
22	6170	0044	55	2486	0447	197	197
23	6184	0050	57	2495	0502	200	200
24	6198	0055	58	2510	0557	203	203
25	6212	0100	60	2522	0100	205	205
26	6226	0105	61	2534	0106	208	208
27	6240	0110	62	2546	0111	211	211
28	6254	0116	63	2556	0118	213	213
29	6264	0121	66	2570	0120	216	216
30	6282	0126	66	2582	0125	219	219
31	6296	0131	67	2594	0130	222	222

RS 2 lags RS 1 by 30 minutes and 5°

FREE!

DICK SMITH'S 1979
JUMBO
CATALOGUE

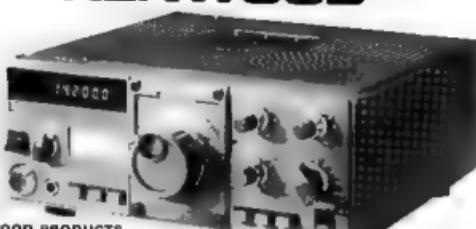
FREE IN THE APRIL ISSUE OF
ELECTRONICS AUSTRALIA

Yes! Dick Smith's new 1979 catalogue is coming. Even if you're not into electronics, you'll find a wealth of information and ideas. Hi-Fi, exotic TV games, home computers, marine radio, CB & amateur radio, experimenter's kits, tools. There is something for YOU. **DON'T MISS OUT!**

See your newsagent today and reserve your copy



KENWOOD



KENWOOD PRODUCTS

TS 120 V all solid state transceiver 30 W PEP
 TS 520 S 160-10M Transceiver
 TS 820-S 160-10 M Transceiver
 R-820 S 160 M Transceiver
 R-820 Communications receiver
 TS 700 SP All mode 2M transceiver
 TS-600-A All mode transceiver
 TS-7000-A 2 M FM 25W Transceiver
 TR 7500 2 M FM 10W transceiver
 TR 7600 2 M FM digital transceiver 800 CH
 TR 8300 70 CM FM Transceiver
 VB 2200 A Power booster for TR 2200
 VFO-30-G Remote VFO for TR-7200 TX-12 MHZ-RX 45 MHZ.

HY-GAIN ANTENNAS

12-AVQ 10-15-20M vertical 13 3/4" tall	\$50
18-AVT/WB 10-80M vertical 23" tall	\$125
TH6-DXX 10-15-20M senior 6 el. yagi 24' boom	\$300
TH3-MK3 10-15-20M senior 3 el. yagi 14' boom	\$240
TH3-JR 10-15-20M junior 3 el. yagi 12' boom	\$175
204-BA 20M 4 el. Tiger Array 26' boom	\$230
HY-CLAD 10-15-20M full size cubical quad	\$260
2M 5 el. Yagi w/balun 6'3" boom	\$25
2M 8 el. Yagi w/balun 12'5" boom	\$30
2M 14 el. Yagi w/balun 15'6" boom	\$40
BN-86 Ba un 50 ohm 1 1	\$20
BJ-5 Balun 50 ohm 1.1	\$14

ANTENNA'S SUITABLE FOR ICOM

11M 5 el. Yagi 17' boom	\$70
11M 1 wave G.P. w/3 radials	\$20
CLR 5/8 wave vert w/4 radials 22'9 1/2" 11M.	\$50
CLR-2 5/8 wave vert w/3 radials 19'10" 11M	\$40

ROTATORS AND CABLE

KEN KR 400 rotator medium duty 28V AC	\$125
CDE HAM L11 rotator heavy duty	\$175
RG 8U Polyfoam Coax	80c per yard
RG 58U Coax	30c per yard
8 core rotator cable	65c per yard

OPTIONAL ACCESSORIES

- VFO-120
- PS-20
- MB-100
- YK-88C
- SP-120

KENWOOD PRODUCTS

TR 7200-G 2 M FM 10W Transceiver
 TR 7010 2 M SSB 10 W PEP Transce ver
 TV 502 2 M Transverter
 TV 506 6 M Transverter
 TL 922 2 KW PEP Linear amplifier
 SP-8 Regulated Power supply 8 Amps
 VFO 520 S External VFO for 520-S
 VFO 820 External VFO for 820-S
 VFO 700 S External VFO for TS-700-SP
 SM 220 Station monitor
 BS-8 and BS 5 VOM adaptor
 SP 820 Deluxe Speaker consul
 SP 520 Speaker consul
 SP 70 Speaker consul for TS-700 & 600
 VOX-3 Vox unit for TS 700 & TS-600
 DS-1-A DC converter for 520-S & 820-S
 DG-5 External digital display TS-520-S
 AT 200 Antenna coupler
 MC 30 S Microphone 500 OHM
 MC 25 S Microphone 50 K OHM
 MC-10 Microphone 50 K OHM
 MC 50 De luxe desk M microphone dual imp
 MC-2 Deluxe Ham clock
 YG 68 CW filter for TS-820
 YC-3395 CW filter for TS-520
 LA-30-A Lowpass filter
 HS 1 Headphone
 HS 4 Headphone
 RD-15 Dummy load 450 MHZ 15 Watts
 RD-300 Dummy load 150 MHZ 300 Watts

SKY-BAND MOBILE HELICAL ANTENNAS

SKY 80 six feet long 3.5 MHz	\$28
SKY 40 six feet long 7 060	\$26
SKY 20 six feet long 14.150	\$26
SKY 15 six feet long 21 100	\$25
SKY 10 six feet long 28 500	\$24

CRYSTAL FILTER, 9 MHz, similar to FT-200 ones. With carrier crystals.

\$39

COAX CABLE CONNECTORS

PL-259
 SO 239 Chassi Mount
 Male to male joiner
 Female to female joiner
 Angle connector

Accessories

SWR 50A 3.5 - 150MHz SWR meter	\$26
12VDC regulated supply	\$26
5M RG 58-U w/PL 259 one end	\$3
Bumper mount c/w 3/8" 24-thread ant. mount	\$7
Gutter mount c/w 3/8" 24-thread ant. mount	\$4.50

**SIDEBAND ELECTRONICS SALES, 477-479 PACIFIC HIGHWAY,
 CROWS NEST. PHONE 438 4191.**

KENWOOD AMATEUR RADIO EQUIPMENT
 MAIL ORDERS: P.O. BOX 184, SUTHERLAND 2232.

PETER SCHULZ, VK2ZXL

Supplying the Enthusiast . . .

SELECTIVE RANGE OF AMATEUR EQUIPMENT

POPULAR BRANDS OF H.F. & V.H.F. TRANSCEIVERS, ANTENNAE, ROTATORS
and MOST AMATEUR ACCESSORIES



SALES AND SERVICE

graham e. stallard

27 WHITE AVE.. LOCKLEYS 5032
SOUTH AUSTRALIA - PHONE 43 7981

VICOM DISTRIBUTOR FOR SOUTH AUSTRALIA

Please Phone, Call or Write for your requirements

AMATEUR RADIO ACTION

IS THE NEW GENERATION AMATEUR MAGAZINE

SUBSCRIBE NOW!

DON'T MISS OUT on your copy of Amateur Radio Action. There's only one way to be really sure that you will receive each and every copy of Amateur Radio Action — and that's by enrolling on our subscription lists. And it won't cost you any more than buying one at the newsagent. That's right, we are offering 12 issues

for only \$12 post free.

Simply fill out the coupon below, enclose a cheque/money order/postal order for \$12 and you will be put on our subscription list to receive the next 12 copies of AMATEUR RADIO ACTION through the post.



Please put me down for 12 editions of Amateur Radio Action, starting NOW!

RATES Within Australia and surface mail overseas:

\$12.00

Air mail to New Zealand and Papua New Guinea:
\$A29.40

Air Mail to USA and Europe: \$A46.20
Herewith enclosed cheque/postal note/money order
to the value of: \$

Name

Address

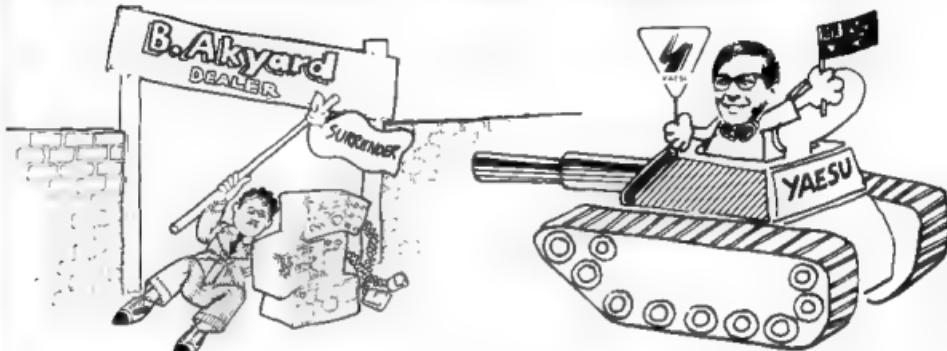
Postcode

Post to: Amateur Radio Action Subscriptions, Box
628E, Melbourne 3001.

DICK SMITH ENDS

★★ THE YAESU PRICE WAR ★★

YOU REAP THE BENEFIT!



Dick Smith Electronics will better any genuine price offered by anyone on Yaesu products.

YES! This means that we will sell you a fully guaranteed, genuine unit at a cheaper price — even if we are competing with a backyard importer who probably hasn't even got provision for warranty service.

And you'll be buying from a fully Australian owned company — your one stop electronics shop who actively supports amateur radio!

HERE ARE OUR PRICES: (WE'LL SEND ANY OF THESE TO ANYWHERE IN AUSTRALIA FOR \$6 EXTRA!)

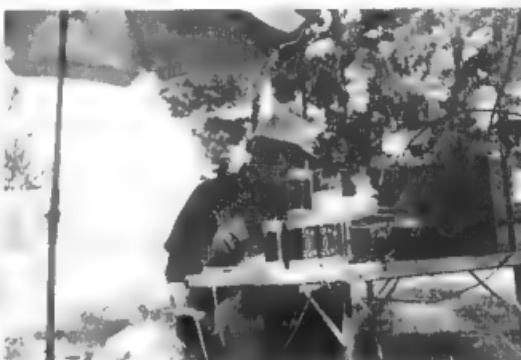
FT-101E 80-10m HF transceiver	Cat D-2860	\$789.00	FT 101Z New HF transceiver	Cat D-2862	\$775.00
FT-301 Solid State HF transceiver	Cat D-2870	\$795.00	FT-901D Top class HF transceiver	Cat D-2854	\$1349.00
FT-7 Mobile HF transceiver	Cat D-2865	\$375.00	FT-227RA 2m FM scanning transce	Cat D-2859	\$379.00
FT-7 2m FM trans with memorizer	Cat D-2890	\$379.00	CPU-2500 computerised 2m transce	Cat D-2889	\$549.00
FC-301 Antenna tuning unit	Cat D-2896	\$219.00	FC-901 antenna tuning unit	Cat D-2855	\$249.00
FL-2100B 1.2kW linear amplifier	Cat D-2546	\$529.00	FL-110 200W linear amplifier	Cat D-2884	\$189.00
FRG-7 Solid State HF Rcvr	Cat D-2850	\$319.00	FRG-7000 Digital HF rcvr	Cat D-2848	\$599.00
FRG-7 Solid State HF supply	Cat D-2872	\$169.00	YC 500S 500MHz Freq Counter	Cat D-2892	\$475.00

We believe that the prices above are better than any supplier in Australia. If you find someone cheaper for the same goods, tell us!

For us to better any price, simply show us the advertisement from any Australian company. After checking that they have stocks available at that price we will sell for a lower price. Offer remains open while present stockst last (approx. \$250,000 worth).

FIELD DAY — PICTORIAL ROUND-UP

The Pub cations Comm thec operated portable at Devil Bend Reservoir, Mornington Peninsula using bands 80m to 70 cm on phone and CW. Call sign used was VK3UV. Section entered Multi-Op, 6 hours.



LEFT. 5 min. "smoko" — Yagis for 6, 2, 70 cm on GII VK3AU's

—

ABOVE RIGHT. Bruce VK3UV on 40 Mx CW — motto "Points gained is proportional to 'lollies' consumed"

LOWER LEFT "Smoko" continued — Ron VK3AFW still works on in Mazda.

LOWER RIGHT Ron VK3OM with FT7 enjoying the shade

Photos by Bill Rice VK3ABP



WAGGA ARC FIELD DAY ACTIVITY

JOHN MOYLE NATIONAL FIELD DAY WEEK-END
Mt. Gravatt, near Tumbarumba, on the edge of the Snowy Mountains.

Club activity started at the camp site after Friday lunch time when the spearhead of the Wagga group got a flying start in the afternoon. Around 4 p.m. work commenced on a huge 80 metre antenna system that went for nearly a mile through the bush. Work on this antenna was interrupted many times by the necessity to quench the consistently high fire that Mt. Gravatt is famous for and the scene was set for the evening's social activities that always accompany the Wagga Club's Field Day activity. The social activities and general frivolities continued till well into early Saturday morning. Saturday arrived with once again good weather, and the task of erecting the rest of the tents, aerials and generator systems commenced. By this time around 18 club members were at the site. It was a real team effort in getting the wide range of HF and VHF aerials assembled. By 3 o'clock everyone was fed, a gear tested out, the log sheets ready and pencils sharpened. Activity was



Another group working the midnight oil on 80 metres very late Saturday night. Left to right: Ron YK3BER, Andrew Hill and Bob Knight.



Frank VK3HNF working 20 metres during the early hours of Sunday morning.

very consistent on all HF bands during the weekend. 80 and 2 metres did appear to be a little disappointing due to lack of activity within the service range of Mt. Gravatt. Our VHF operators did confirm that the bands were actually open for most of the weekend, but there was just not sufficient participation from home stations and other field stations to ensure the level of activity so much hoped for during a large field day operation. However, plenty of contacts were made and we don't recall any of our club participants saying that he was bored. It was a terrific week-end enhanced by a mixture of good operating conditions

on the air end, and equal importance to us, a really first class social period that will be remembered for a long time. Let's hope we see more stations in the field next year.

Club Register WAGGA AMATEUR RADIO CLUB
Meets last Fridays, Rescue Cubrooms, Bolton Street, Wagga.

Club call signs VK2WG, VK2NWG and Repeater Ch 3 VK2RWG

Secretary's address C/o PO Box 71, Koorialing, Wagga 2650

VK3SW

QSP

SOME COMMON DEFINITIONS FOR UNLAWFUL PERSONS

ADDER A snake in the grass.

FULL ADDER As above, but not hungry any more.

AND Sirs.

OR Substance from which metals are extracted.

EXCLUSIVE OR Used um.

SH FT REGISTER Book to sign on and off at work.

LATCH Opens doors

STORE Local shop

COUNTER Thing what shop assistant stands

RING COUNTER 1 As above, but in jewellery store 2 Dirty old man

TWISTED RING COUNTER A very dirty old man

DECODER DC3

BUFFER French polisher

EXPANDER A pants that died.

DIVIDER Chiaro

TRIGGER Roy Roger's horse

HAND Past tense of grandmother

NOR What dogs do to bones.

NOT Refer to Scout manual

SHIM New brand of soft drink.

CODE Nasal virus.

BINARY Two one-legged canaries.

OCTAL Everything pawned.

FAN OUT Regonal air-conditioning

CHIP Thing eaten with fish.

From Department of Transport Airways Engineering Branch News Bulletin "Grapesine"

THE PERFECT MOBILE RIG...

ATLAS 210X/215X - 5 BAND - 200 WATT All Solid State HF SSB/CW Transceiver

STILL THE MOST POWERFUL MOBILE RIG ON THE MARKET PRICE WITH NOISE BLANKER INSTALLED \$852 INCLUDING TAX.
GENERAL SPECIFICATIONS

FREQUENCY COVERAGE WITH INTERNAL VFO, 1800-2000 kHz (Model 215X only), 3500-4000 kHz, 7000-7500 kHz, 14,000-14,500 kHz, 21,000-21,500 kHz, 28,400-29,400 (Model 210X only). Note that 10m band may be easily owner adjusted to cover any 1000 kHz segment.

FREQUENCY CONTROL Highly stable VFO common to both receive and transmit modes. Less than 1 kHz drift during the first 30 minutes. Less than 300 Hz per hour after 30 min.

ALL SOLID STATE DESIGN 4 ICs, 16 transistors, 32 diodes.

MODES OF OPERATION SSB (USB, LSB), CW

MODULAR CONSTRUCTION With plug in PC boards

PLUG IN DESIGN Antenna, mike, extension speaker and power supply connections, etc., are automatically made when set is plugged into spec al mobile mount or AC power supply console.

POWER REQUIREMENTS 12-14V DC, 16 amps peak on transmit, 300-600 mA in receive

DIMENSIONS 24.1 cm wide, 8.9 cm high, 24.1 cm deep.

WEIGHT 3.1 kg (6 lb. 14 oz.)

ACCESSORIES

DMK --- Plug in mobile mount for mobile and maritime mobile use

\$63

DMC --- Self-contained digital readout

\$236

10XB --- Self-contained external crystal oscillator for fixed channel operation on both inside and outside norms. VFO band edges

\$85

MTI --- Mobile antenna matching transformer. Changes base impedance of antenna to 50 ohms

\$45

DCC --- DC battery cable with plug. Not required if DMK is purchased 220CS --- 110/220V AC console power supply

\$15

OTHER ACCESSORIES AVAILABLE

\$210

INTRODUCING TO AUSTRALIAN AMATEURS...

THE UNIQUE WIDE RANGE WIRE TUNER

The Unique Wide Range Wire Tuner will provide a perfect match to nearly any single wire fed antenna system in the frequency range 1.7 MHz to 30 MHz. It provides the broadest tuning range of any antenna coupling device on the amateur market. At 8% in WdB, 5% in high and 12% in deep, it is compact in size and capable of handling in excess of 1500 watts of output power through its continuously variable LC combination. There are no gaps between tapped setting as found on most transmatch devices enabling any frequency within the specified range to be matched. It is therefore suitable for other than amateur services in the MF and HF spectrum.

It is ideal for portable and maritime mobile operation where space and/or lack of time precludes the use of various resonant antennas. Herb Johnson, President of Atlas Radio, uses one on his own yacht and recommends their use with Atlas equipment. Construction is of first quality materials throughout.

Write or phone for further information and full technical specifications.

**PRICE: \$285 — SALES TAX AND DUTY PAID
GUARANTEED FOR ONE YEAR.**

ALSO AVAILABLE:

Shure 404C PTT hand held mike

\$35

Shure desk mike

NOTE The Atlas 350XL will be in stock again as soon as it is back in production. It is temporarily out of production while Atlas concentrate on a new small model, thus increasing their range to three models.

EDDIE ROOMS E.Comm.(Melb.) VK3NRR/Z7Z

Office: 12 BAILEY ST., BIRNSDALE, VIC. 3875. (051) 52 2822

Melbourne Enquiries: (03) 547 5860

**FOR ATLAS AND SPECIALISING
IN MARITIME MOBILE
AMATEUR RADIO**

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher

The Editor

Dear Sir

Wish to draw the attention of a certain club who is currently using the call sign VK3AHK on the 14 MHz band to the fact that, as the genuine owner of that call I strongly object to this practice.

Therefore I suggest to the person that (1) he steals someone else's call sign, or (2) obtains a P and T licence by passing an office examination thereby becoming legitimate (radio wise). If neither course appeals to him the only other alternative I can suggest - without profanity - is that he peruse the Yellow Pages where he will, no doubt, be enabled to discover the address, and utilise the services of a competent taxidermist.

Yours faithfully,
H C Kelles VK3AHK

The Editor

Dear Sir,

RNARS UPDATE

Further to the article by Don Walmsley G3HZL in the February edition of AR, we wish to advise of some recent changes in the Royal Naval Amateur Radio Society.

The call sign G4EOK has been revoked and the Amateur Radio Station on board HMS *Sellout* now operates under the more appropriate call sign of G4HMS. Whenever the vessel is open to the public the call sign of GB2RN is used.

HMS Mercury continues to be the Society Headquarters with the general call sign of G3BZU, but less GB2RN on special occasions.

Current (February 1979) membership of the Royal Naval Amateur Radio Socy stands at 1,254, which is spread world-wide. There are 25 members in Australia (all States represented) and 27 members in New Zealand.

The Australian members have recently commenced regular nets on 80 metres and we invite all radio amateurs with a maritime background to join our Society. The nets are as follows: SSB - every Monday 3.510 MHz ± QRM, N/C/VK1CDR/VK2ALG/CW - every Tuesday, 3.527 MHz ± QRM, N/C/VK5MD/VK2ALG.

We wish to stress that, although our Society name is Royal Naval Amateur Radio Society reflects our original membership is open to ALL amateurs with a seagoing background. In the Australian Branch (Sqn), we have current serving members of the RAN together with retired members of the Royal Navy, Royal Australian Navy, Royal New Zealand Navy, British, Australian and New Zealand Merchant Navas as well as civilians connected with the aforementioned services. A life membership is offered to former members of other navies/merchant marines e.g. USN, Royal Netherlands Navy, Kongsberg etc.

Therefore, if any readers are at all connected with the sea and/or maritime life and would like to find out more about the Society they are invited to contact either: Surgeon-Ra Admiral Jim Lloyd VK1CDR if ex-navy, or myself Terry Clark VK2ALG, if ex-merchant navy. Both CTHR.

Yours faithfully,
Terry Clark VK2ALG, RNARS 1196.

The Editor

Dear Sir,

I too would like to add my voice to the protest about the "Wooley Bum" group, although I hesitate to do so in the knowledge that any publicly such as this may only further their obscure cause.

There would appear to be no justification for any encouragement of a group with standards as low as this one. Sure amateur radio as a hobby has more than sufficient problems at this particular time without deliberately fostering a cancer within itself! It could be shown that the "Wooley Bum" group has contributed nothing to bettering our hobby. It would be a different matter, but I have yet to see any evidence of this.

The most unfortunate aspect of this group's activities is that newcomers to the hobby and those outside it are likely to think that the activities of this isolated group are representative of Amateurs as a whole.

It is indeed regrettable that these misguided people cannot or will not make a more realistic contribution to our hobby. In the long term it is they who will have most to lose.

NAME AND ADDRESS SUPPLIED

The Editor

Dear Sir,

I read with interest the comments from the "RD" council manager in February AR, page 60, about the woeful standard of log entries. Having been involved in a related area, I know only too well the problem he faces and he has my sympathy. However, I have also seen the other side of the coin, too, and there may be some excuse for the problem.

Currently with most contests and awards (but not all) there is usually no set application form or printed log sheets to record your entry. The contestants or applicant for an award can only follow the instructions given in the context of award rules and improvise accordingly. This invariably leads to a broad spectrum of entry standards from the ultra neat that are a delight to receive down to the "dog's breakfast" which is quite common.

It shouldn't be too difficult to arrange a standard format for recording contest contacts and/or award applications that could be printed in pads of, say, 25 or 50 sheets. It could then be made a condition of entry that only entries made on such forms would be acceptable. By doing this the job of both the entrant and the organisers would be made easier. By using carbon paper between sheets an original and copy could be made in one go, thus saving the operator the chore of having to copy it into his log. One copy could simply be attached to the station log as a permanent record.

If the WIA could produce such forms at a reasonable cost and in a format compatible with log books I feel certain that this would encourage more people to submit logs for contests than do so presently. Surely one of the fundamental policies of the WIA should be to encourage on air activity in every possible way and this must achieve this end.

The use of lightweight airmail type paper would be desirable as the majority of entries have to go overseas and almost invariably airmail must be used to ensure arrival in time to make the closing dates. Even logos for the "VK-ZL" contest go to ZL every second year. Bulky "homebrew" forms can be very expensive to mail, even in small quantities.

Yours faithfully,
Geoff Wilton VK3AMK,
7 Norman Avenue, Frankston, Vic. 3199.

36 Rutland Street,
Coorparoo 4151, Queensland.

The Editor

Dear Sir,

It is refreshing to read the reactions of the anonymous VK3HN and the righteous wrath of our Rex Black VK3VYA concerning the "Wooley Bum" certificate. With the exception of one point in his letter, I support him in expressing disgust at the way in which a number of CB and ex-CB, now Novice licensees, pollute the channels, and also the Radio Press with their defiance of the commonly acceptable standards of operation and correspondence. However, I urge Rex and all others who feel cheated by the withdrawal of 27 MHz from amateur use to shed no more tears over the fact that a section of the spectrum designated for industrial, medical and scientific radio transmissions, virtually the garbage heap of the whole spectrum, was withdrawn from the amateur service. The Australian delegation to the WARC in 1955 simply followed the lead given by the Federal Communications Commissioner of America who, obviously directed by great pressures applied in the political lobby by the electronics and equipment manufacturers, re-assigned the Citizens Band in the USA to 26.960 MHz, etc, from UHF, where at that time manufacturing techniques were not yet capable of producing hand held and mobile equipment in really compact and lightweight form

of sufficient reliability robustness and reasonably low cost, to meet the huge market of would-be users clamoring for them.

27 MHz equipment almost immediately available then was apparently seen as saleable in Australia to large scale farmers, station owners and the small boat industry, a huge expanding market in its own right. It followed that CB would be sold in huge quantities in Australia because of the mirror image of the American way of life which so many Australians prefer.

The immediate difficulty was not, however, the allocation of frequency since the JS had the next garage band spectrum to offer. The public, non-technical, non-experimental would need service for the equipment. It seems, looking back, that the major manufacturers of telecommunications and radio equipment in Australia had no desire to become involved in this new CB gimmick and thus the manner of service became of paramount importance.

From whence had the Establishment in WWI drawn its enlarged staff of skilled radio technicians operators and instructors? Mostly directly and often without realising it indirectly from the amateur ranks, because as many competent amateurs were, and are today, employees of the telecommunications industry, the broadcasting industry, the radio and TV service industry, aviation, the marine radio communications industry, etc, the list is extensive. Does it not follow that a neat way of introducing CB 27 MHz into the country was to encourage the licensed amateur to operate on the garage band? Why, Mr. Dick Smith in his recent broadcast feature over ABC would only radio called "The Big Ten Four", said this "CB radio was introduced into Australia for the amateurs" — and so it was. Some amateurs quickly saw possibilities of prosperity in this new thing. Practically all radio service firms jumped on the band wagon. Employees of these firms (licensed amateurs) had little option but to obey their masters and install and service the 27 MHz illegal to operate equipment at that time. The public, that is the interested section of the public, now reassured about the servicing problems, decided to turn on CB. The results are too well known to merit further discussion.

Many amateurs, those not involved in the money making side of this rapidly expanding service industry, resented the intrusion () of CB into amateur () band.

Many clashed with CB, all the you remember. Eventually, numerical pressure and the anti-establishment attitudes of an appreciable section of the Australian community urged on by powerful commercial banking in the political lobby, resulted in the removal of the amateur () PRIVILEGED () band to operate in the amateur Medical and Scientific section of the spectrum.

So, Rex and others who have expressed regrets about the loss of 27 MHz please reflect on my remarks and take heart, we are well rid of the unbearable 27 MHz situation into which we were precipitated by Australia's importers and all those involved for several years in the import distribution on installation and servicing of equipment which was illegal to use. Now, Rex, as you so correctly forecast, the radio amateur has inherited the onerous task of converting as many of the CB fraternity as possible to a "low grade of amateur" radio licensee. There are some bright spots in the picture. Many CBers are intelligent and highly respectable citizens who simply believed all the advertising and rumors and adopted the trend. They were misled by the high pressure salesmanship of the day. But intelligent and forward looking, they have now upgraded to VHF training and membership. Australian amateur radio is rapidly gaining numerical strength and has a seat in the near future show evidence of an increasing content of intellectual stability and academic attainments by these newer members. So then on balance, we have survived a crisis and are poised for a new era of amateur radio technical and cultural expansion. What could be better? To return to the subject of your concern, a point concerning editorial responsibility arises. The Editor reserves the right to refuse to publish, or as he puts it, "to edit all material, including letters to the Editor and Hamads and reserves the right to refuse acceptance of any material WITHOUT SPECIFYING A REASON".

Why then, was the material submitted by Mr. Ransbottom published apparently in its original form? Perhaps you can point the mistake further through the good offices of the Federal Convention. Had he rejected the Wooley Bum article, we would not have been disturbed by it and have remained ignorant of its existence. Furthermore, had he exercised his editorial powers, neither you, I, or Mr. Ransbottom would ever have known why he rejected it! An editor's work is fraught with psychological pitfalls, so that what appears to him as a boisterous attempt at humour albeit, on the coarse side, becomes an outrage to some readers and evokes guffaws of belly laughter from others. Again, I emphasize my dislike of ideas and material of the Wooley Bum species, and their usually over loud noises of those who enjoy it. However, these are some varieties of jokes which, if used covertly, to influence readers under the well known guise of doing good! We've all heard of the Do Gooders.

How about this gem from QTC, our Queensland pamphlet, of October 1978.

'MAINLY FOR OLD TIMERS'

Lord thou knowest better than myself that I am growing older and I will some day be cold. Keep me from getting talkative and particularly from the late habit of thinking I must say something on every occasion. Release me from the compulsion to try to enlighten everybody. Keep my mind free from the recital of endless detail; give me wings to get to the point I ask for grace enough to listen to the tales of other plans. Help me to endure them with patience. But seal my lips on my own aches — they are increasing and my urge of rehearsing them is becoming weaker as the years go by. Teach me the lesson that occasionally it is possible that I may be mistaken. Keep me reasonably sweet; a sour person is one of the crowning works of the devil. Make me thoughtful but not moody, helpful but not bossy. With my vest store of wisdom it seems a pity not to use it all — but Thou knowest Lord that I want a few friends at the end . . .

From ANOTHER OT "

What better way of subtly brainwashing a (presumably) unwelcome commentator or critic who attends meetings and exercises his right to air his views? Wooley Bum is crude but harmless by comparison, but the spell from Another OT is not, by any means. You may notice the number of well dressed ageing amateurs of great DK reputation who sit silent, lips firmly pressed together for almost a lifetime after reading such trash. These people ought to have something constructive to contribute, but we shall apparently never discover it, for they are still obeying the dictum laid down by ANOTHER OLD TIMER.

This kind of dictum is commonly displayed in waiting rooms of doctors, psychiatrists and mental hospitals. Nursing homes for the aged make use of it!

Thankfully, the average age of the radio amateur is descending towards the original age groups of under 25, and Another OT will, if he still exists, find no application for his respective talents. I have, I must draw attention to the need for the Editors of the various WIA publications to take heed of Rex Black and others who have an interest in the quality of Amateur Radio humour.

Yours sincerely

George Harmer VK4XW

The Editor,
Dear Sir

All long last the RD contest results for 1978 have been published (AR February 1979). This seems a terribly long time considering the number of entries.

I have noted the manager's comments re poor log keeping, but cannot agree that logs full of errors or without the mandatory cover page should ever be allowed.

A radio contest is a sport, and in all sports rules broken are subject to penalty. The log layout is clearly published before the contest, but page size is left to the individual.

This is convenient as it allows cheap production for those who have access to various copying machines.

If the WIA could produce standard log sheets cheaply it would help contest managers, however,

it would be near impossible to get all contestants to use them.

Another point which is a bone of contention with a lot of regular contestants is the effect non-participants have on the final result.

I know the history of the contest is to encourage maximum participation in all VK call areas and I certainly try to support this concept.

I do not think it is a fair contest when non-starters (for whatever reason) have a major effect on the final score.

Could we please have a 1980s type re-think and try a scoring system based on participants' scores ONLY?

In closing I would like to thank the contest manager for a most enjoyable contest and trust those concerned will accept the above comments as constructive criticism and suggestions based on 20 years of RD contest participation.

M N O'Burill VK3JWV,
3 Maxwell Street, Lalor, Vic. 3075.

CONTESTS

Wally Watkins VK2ZWW/NCU
Box 1085, Orange 2800

CONTEST CALENDAR

April

7-8 POLISH SP CW CONTEST
VK2BIO PSS CONTEST.
21-22 COMMON MARKET DX CONTEST.
25-26 DUTCH PACC CONTEST.
28-29 SWISS H6 CONTEST.
29-30 EA (SPANISH) KING TROPHY.

May

28-29 CQ WW WPX CW CONTEST.

EA KING TROPHY

2002Z 29 April 2000Z 29 April, all HF bands, but only 20 hours operation allowed. RS plus 3 figure serial from 001. Contact only EA stations.

Log Date, GMT, station worked, serial numbers, indicate multipliers.

Scoring 1 point per QSO, multiplier each Spanish province.

Final score QSO points times multi.
Log to ARG, PO Box 181, Callejola, Barcelona, Catalonia, Spain.

Trophy end eight days in Spain to highest International score. Diploma for amateurs with over 50 contacts.

ITEM SPOTS

VK4AA managed to have 48,100 QSOs in 1978. That is an average of one every 11 minutes. VK2 desperately want him for the RDI.

ROSS HULL MEMORIAL CONTEST 78-79: RESULTS

(a) TX Open:

7 Day 48 Hour

(b) TX Phone:

VK2H2L	558	120
VK4D0	2748	954
VK2ZBD	920	249
VK3AUJ	784	420
VK3AUQ	528	209
VK2YHG	—	398

(c) TX CW:

Nil entry

(d) RX Open:

L60018 16 —

CONTEST CHAMPION TROPHY

POINTS TO DATE

VK2HZ—10 points, VK4D0—10 points, VK2ZBD—9 points, VK3AUJ—8 points, VK3AUQ—7 points, VK2YHG—6 points.

Points are subject to confirmation of WIA membership.

Other nominated contests for 1979 are John McIyle, Remembrance Day and the VK/ZL.

WESTLAKE NOVICE CONTEST 1978: RESULTS

SECTION N (Novices)

CLASS A (Phone)	VK2NBZ	447	VK3NLP	144
VK2NYL	442	VK3NMC	65	
VK2OZO	378	VK3NRL	455	
VK2VGY/P	323	VK4NIK	233	
VK3HNJ	163	VK4MUY	99	
VK2VBC	157	VK3NLC	180	
VK2VAR	95	VK3NDZ	543*	
VK2NCL	73	VK3NFS	364	
VK2NMJ	47	VK3NCF	166	
VK2NBS	45	VK7NSA	193	
VK3NHL	415	VK7NFR	84	

CLASS B (CW)

No logs received

CLASS C (Open)	VK3NTV	VK3NTS	288
VK3NYF	470	VK3NPU	185
VK2NMU/P	234	VK3NHR	101
VK3NNH	747	VK6NAY	336
VK3NHA	645	VK3NHN	205
VK3NTF	574		

SECTION F (Full Cell)

CLASS A (Phone)	VK2AHB	VK3AEER	10
BK2BIO	378	VK4ARW	308
VK2BYV	208	VK4AYL	90
VK3OZS	120	VK4AZP	35
VK3BLP	84	VK5ASW	257
VK2AKH	62	VK2RD8	446*
VK2AKX	48	ZL1TB	418
VK3AVB	64		

CLASS B (CW)

VK3AXB

CLASS C (Open)	VK3OL	VK3KS8	185
VK2IO	91	VK6AAR	382*
VK3BSR	225		

SECTION L (Listener)

CLASS A (Phone)

R Weston VK3		219
C Thorpe VK4		68
R Daymon VK5		5
B Entwistle VK8		28*
CLASS B (CW)		
E Treblefoot VK3		
CLASS C (Open)		
M Hall VK2		463*

SECTION R (Club)

CLASS A (Phone)

VK2BHU	83*	VK3ARC	48

CLASS B (CW)

No logs received

CLASS C (Open)	VK2ATZ	VK5ALM	284
VK3BUH/P	791*		

* Indicates winner in this Class.

MAGPUBS

New subscription rate:
QST — for one year \$16.75

WIA P.O. Box 150, Toorak, Vic. 3142

QSP

QSP PROCEDURE

REMEMBER, before calling CO, first a clear frequency must be found. Listen carefully on the frequency for at least a minute, check that the frequencies either side are also clear. It is also recommended that you ensure the frequency is in use. If this procedure were followed faithfully operating on the HF amateur bands would be much more enjoyable. It is also called "good manners". From QTC AR Supp. Feb. 1979.



EMONA electronics

Main Office, Sales & Service: 23 JUNGE ST., RANMICK 2631. Ph. 398 6376
City Branch: ROOM 208/61 GEORGE ST., SYDNEY 2000. Ph. 212 4815
Cable Address: EMONA Sydney.

The great evolution of



\$1399

MLA 2500B — 2 kW AMPLIFIER

The world famous MLA-2500 is now the MLA-2500B. Featuring the same EIMAC 8875 work-horse triodes, self-contained continuous duty power supply, full complement metering and controls from the front panel, plus NEW HIGH-LOW POWER SWITCHING for consistent efficiency at both the 1KW and 2KW power levels. The basic MLA-2500 remains the same unit that thousands of Amateurs now have in use the world over, a cool-running full-power Linear Amplifier of high quality, all-American construction and design.

SPECIFICATIONS

- NEW FEATURE H-L power switching
- 160 thru 10 metres
- 2000 watts PEP input on SSB
- 1000 watts DC input or CW RTTY or SSTV
- Var at-e forced air cooling system
- Self contained continuous duty power supply 2250V idle SSB — 1575V idle CW approx.
- Two EIMAC 8875 externs-anode ceramic/metal triodes operating in grounded grid

- 50 ohm Input Impedance unbalanced at better than 1.5 to 1 VSWR
- Harmonic Suppression meets or exceeds FCC requirements
- Built-in ALC (negative going)
- RF Drive 100W CW
- Easily changed 117V or 234V AC 50-60 Hz
- Third order distortion down better than 30 dB
- 65 watts minimum drive for 1 KW DC Input
- Size 5½" H. x 14" W x 14" D
- Weight 47 lbs



\$799

GLA 1000 — 1 kW AMPLIFIER

SPECIFICATIONS:

- SIZE 5½" H. 11" W. 11" D.
- WEIGHT 24 lbs.
- ELECTRICAL — Power Consumption 117V AC 50/60 Hz 12.5 amps. Factory fused at 15 amps. 234V AC 50/60 Hz 7 amps. Recommended fuse 10 amps
- FREQUENCY COVERAGE 80 metres 3.45 to 4.3 MHz 40 metres 6.950 to 7.5 MHz 20 metres 13.950 to 14.5 MHz

15 metres 20.950 to 21.350 MHz
10 metres 26 to 30 MHz

- RF DRIVE Max. 135W for 1 kW input
- DC INPUT. 1 KW CW, 1200W PEP SSB
- INPUT IMPEDANCE 50 ohms 1.5:1 VSWR APX
- SPURIOUS EMISSIONS Ind better than 30 dB, harmonics down better than 40 dB
- COMPONENTS 4 — D50-A tubes
6 — Diodes
- FCC Type Accepted

- JR. MONITOR
- SUPER TUNER
- 80/10 TUNER
- BIG DUMMY

- \$104
- \$160
- \$95
- \$43

DenTron power machines!

DTR 2000L — 2 kW AMPLIFIER

The ultimate in precision linear amplifiers from DenTron. Features range from a Broadcast proven 8875 tube with a continuous duty built-in power supply with a vacuum impregnated power transformer. Cooling is EIMAC specification forced air, through a pressurized chimney and chamber. Dual metering is provided for plate voltage and current monitoring, along with front panel switching of transformer secondary taps and linear bypass. Compatible with most exciters. These amplifiers have been tested and proven in every imaginable situation folks could put them through, from rare DXpeditions to medical research labs. Not to mention hamshacks the world over.

SPECIFICATIONS

- Frequency Range 160-10 metres
- Modes USB, LSB, CW, RTTY, SSTV
- Power Requirements: 234/117V AC 50/60Hz
- RF Drive Power: 125W max., and 65W RMS min. for 1 KW DC Input
- DC Pure Voltage: 500W (idle + 250W approx.) CW (idle + 180W approx.)
- Duty Cycle: 100% at full power
- Input impedance: 50 ohms nom.
- Input VSWR: 1.5 to 1 average
- Output impedance: 50 ohms nom.
- Antenna and VSWR: 3 to 1 max.
- ALC negative going, ad. adjustable from rear panel
- Spurious Emissions: IMD: greater than 30 dB down harmonics: down better than 40 dB
- FCC Type Accepted
- Size 5½" H. x 14½" W x 14½" D
- Weight (inc. 8875) 54 pounds
- Packages in 5/8" Hardwood Crate



\$1199

THE CLIPPERTON-L 2 KW AMPLIFIER

Adventure is a part of hamming, and DenTron's new "Clipperton-L" linear amplifier is dedicated to that spirit, with continuous duty power and high quality components. There are four 572B triodes operating in grounded grid, hi-lo power switching and linears bypass from the front panel, a large illuminated meter for monitoring plate current and plate voltage, a built-in continuous duty power supply with rear panel selection of 117V or 234V primary transformer taps, adjustable ALC. Compatible with most exciters, the Clipperton-L delivers 2000 watts PEP input on SSB and 1000 watts DC input on CW, RTTY or SSTV; all continuous duty.

- NEW FEATURE Hi-Lo power switching
- 160 thru 10 metres
- 2000 watts PEP input on SSB
- 1000 watts DC Input on CW, RTTY or SSTV
- Forced air cooling
- Self contained continuous duty power supply 2250V idle SSB — 1575V idle CW approx.
- 572B Triodes operating in grounded grid

- 50 ohm Input Impedance unbalanced at better than 1.5 to 1 VSWR
- 50 ohm Output Impedance
- Harmonic Suppression meets or exceeds FCC requirements
- Built-in ALC (adjustable e)
- Size 8" H. x 14½" W x 14½" D
- Weight 42 lbs



\$489

DenTron ANTENNA TUNERS:

- MT 3000A \$447
- MT 2000A \$270
- SUPER TUNER PLUS \$199

WRITE FOR OUR LATEST
HAM-RADIO EQUIPMENT
CATALOGUE

SIDEBOARD ELECTRONICS IMPORTS

P.O. BOX 23, SPRINGWOOD, N.S.W. 2777
 WAREHOUSE 78 CHAPMAN PDE., FAULCONBRIDGE
 TELEPHONE (047) 51-1394 A.H. (047) 54-1392

Next month, MAY 1979, we shall have a stock of new CDR rotators, apart from the well-known HAM-III. The TAIL-TWISTER is actually a larger version of the HAM-III, good for Christmas-tree stacked HF Yagis or 40 Metre beams, further the BIG-TALK, a smaller one than the HAM-III, for small HF and larger VHF beams. The BIG-TALK has apart from the normal azimuth control, a push-button programmable 4-position control.

All rotators of necessity will continue to be for 28 Volt low voltage AC operation as the NSW Electricity Authority demands high fees for inspection and approval of 240 V AC operated control boxes which expense we cannot justify with the small market here for rotators.

HY-GAIN ANTENNAS:

12-AVQ 10-15-20M vertical	\$50
18-AVT/WB 10-80M vertical	\$125
TH-6DXX 10-15-20M 6-el yagi	\$300
TH3-MK3 10-15-20M 3-el yagi	\$260
TH3-JR 10-15-20M 3-el yagi	\$175
204-BA 20M 4-el Tiger Array	\$230
HY-QUAD 10-15-20M Quad	\$260
2M 5-el yagi w/balun 6'3" boom	\$25
2M 8-el yagi w/balun 12'5" boom	\$30
2M 14-el yagi w/balun 15'6" boom	\$40
BN-86 balun for beam buyers	\$20

ANTENNAS SUITABLE FOR 10M

11M 5-el yagi 17' boom	\$70
11M CLR 5/8W w/4-radials	\$50
11M CLR-2 5/8W w/3-radials	\$40

ROTATORS AND CABLES:

KR-400 Med. duty 28V AC oper.	\$125
HAM III Hy. duty 28V AC oper.	\$175
Bottom bracket Ham III.	\$10
KS-065 Thrust bearing KEN	\$25
8-core rotator cable per yd.	65c
RG-8U foam co-ax per yd.	80c
RG-58U co-ax per yd.	30c
No.14 H.D. copper wire per yd.	10c
7/8" H D foam co-ax per ft.	\$1

ACCESSORIES:

SWR-50A 3.5-150Mhz SWR meter	\$26
Voltage Reg. 18V AC in. 12V DC output	\$23
240/18V AC transformer	\$10
5M RG-58U w/PL-259 one end	\$2.50
Bumper Mount 3/8" 24-thread	\$5
Gutter Mount 3/8" 24-thread	\$3

COAX CONNECTORS:

PL-259, SO-239 Cable joiners ea	75c
Right angles & T connectors ea	\$1.50
Mic sockets 3 and 4 pin ea	75c
GLP right angle RG-58U to SO-239 w/lock nut & weatherproof cap	\$2.50
MLS right angle RG-58U-PL-259	90c

KENWOOD PRODUCTS:

TS-520-S 10-160M transceiver	\$725
TS-820-S digital transceiver	\$1100
TS-700SP 2M all mode trans.	\$850
TS-120V 10-80M mobile trans.	\$600
TR-7600 2M FM transceiver	\$400
TL-922 10-160M linear amp	\$1200
DK-520 Adaptor (TS-520)	\$20
LF-30A low pass filter	\$30
TV-502 2M transverter	\$300
AT-200 Antenna matchbox	\$175
DS-1A DC/DC converter	\$75
VFO-820 for TS-820-S	\$185
VFO-520S for TS-520-S	\$160
SP-520 for TS-520-S	\$30
MC-10 hand held microphone	\$20
MC-50 Desk microphone	\$50
HC-2 Ham clock	\$35
BS-6 and BS-5 (pan adaptor) ea	\$65

YAESU MUSEN PRODUCTS:

FT-7 10-80M mobile trans.	\$475
FT-301S 10-160M mobile trans.	\$800
FRG-7 5-30Mhz receiver	\$350

NOVICE SPECIALS:

10M Sideband SE 502 USB/AM 15W PEP 240V AC/12V DC. inbuilt SWR/RF meter 28.3-28.6 Mhz	\$150
10M Universe 224M USB/AM 15W PEP 12V DC 24-ch. 28.480-28.595 Mhz in 5-Khz steps clarifier operates transmit and receive	\$125

CRYSTALS (For amateur license holders)

Set of 8-crystals for converting 23-Ch 27-Mhz CB units to 28Mhz. suitable for Sideband, Universe, Kraco, Hy Range V etc. Converts as per UNIVERSE 28Mhz above — crystals and conversions instr.	\$40
Double female connectors	80c

All prices quoted are net, ex Springwood NSW, cash with order, subject to change without prior notice. All risk insurance is free: freight by air, road, rail or post at cost. All orders cleared on a 24 hour basis after receipt with payment.

Arie Bies (VK2AVA) Proprietor

Roy Lopez (VK2BRL) Manager

VK/ZL/OCEANIA DX CONTEST 1978: RESULTS

VK — Phone	Call										VK3CRJ										21285		
	100	80	60	20	III	10	Total	VK3AEW	—	5	24	1650	8360	912	10851	21285	21285	21285	21285	21285	21285		
VK1BS	—	—	20	4	40552	48922	106353	195651	VK3YK	—	—	4	2700	3920	2178	8802	—	—	—	—	—	—	
VK1RM	—	—	—	—	13385	88670	—	112255	VK3DF	—	—	—	—	3105	3500	581	7257	—	—	—	—	—	
VK1BC	—	—	440	4	86480	8860	2048	97930	VK3DQ	120	—	840	1988	3710	—	6659	—	—	—	—	—	—	
VK1FT	—	—	—	—	27666	38148	18666	84480	VK3DM	420	—	—	—	—	—	—	—	—	—	—	420		
VK2KT	—	—	—	—	—	379800	—	379800	III	5	200	—	—	—	—	—	—	—	—	—	205		
VK2AXM	—	—	—	—	—	—	236088	VK3SV	—	20	45	—	—	—	—	—	—	—	—	—	180		
VK2APK	—	—	—	—	51675	117784	—	169454	VK3FG	—	—	—	—	—	—	—	—	—	—	—	65		
VK2N2U	—	—	—	—	—	136192	—	136192	VK4KA	45	20	11222	40180	55440	112230	219147	—	—	—	—	—		
VK2NQG	—	—	—	—	—	121660	—	121660	VK4SF	—	—	—	—	—	—	—	—	—	—	128	2100		
VK2B5S	—	—	—	—	9432	81910	102315	121657	VK4CJ	—	—	224	16	260	1134	1634	—	—	—	—	—		
VK2AVO	—	—	—	—	—	—	35154	35154	VK5MD	—	—	240	2875	15580	5088	51123	—	—	—	—	—		
VK2C2VX	—	—	—	—	—	25704	—	25672	VK5CR	—	—	—	—	—	—	—	—	—	—	16675			
VK2AHB	—	—	—	—	4717	16000	819	19440	VK5SW	—	—	—	—	—	—	—	—	—	—	4300			
VK2HVB	—	—	—	—	—	20336	—	20336	VK6H	—	—	—	—	—	—	—	—	—	—	—			
VK2HYB	—	—	—	—	—	—	19647	VK6FW	—	—	—	—	—	—	—	—	—	—	—	—			
VK2BAM	—	525	B	3719	6030	7095	17264	VK7H	—	—	—	—	—	—	—	—	—	—	—	41328			
VK3ABC	—	—	—	—	11766	—	—	11766	VK7HZ	—	—	—	—	—	—	—	—	—	—	20210			
VK2NPZ	—	—	—	—	—	608	11084	11084	VK7P	—	—	—	—	—	—	—	—	—	—	3120			
VK2BQS	—	500	—	1824	450	288	3062	VK7ZZ	—	—	—	—	—	—	—	—	—	—	—	2136			
VK3OT	—	—	—	—	—	548608	—	548608	VK7TR	20	30	32	180	578	—	—	—	—	—	840			
VK3AMW	—	—	—	—	8600	9024	256542	274166	VK8XW	—	—	—	—	—	—	—	—	—	—	8644			
VK3ABH	—	—	—	—	44376	44460	18540	104675	VK8	—	—	—	—	—	—	—	—	—	—	—			
VK3NHA	—	—	—	—	—	11366	—	11366	VK8	—	—	—	—	—	—	—	—	—	—	—			
VK3SM	—	—	—	—	1184	50	1680	4594	VK8	—	—	—	—	—	—	—	—	—	—	—			
VK3AUQ	—	36	562	80	2346	—	—	3374	VK8	—	—	—	—	—	—	—	—	—	—	—			
VK3XB	—	2080	—	—	—	—	—	2080	VK8	—	—	—	—	—	—	—	—	—	—	—			
VK3AWO	—	1450	—	—	32	—	1482	VK8	—	—	—	—	—	—	—	—	—	—	—	—			
VK3ASB	—	—	—	238	188	972	1398	VK8	—	—	—	—	—	—	—	—	—	—	—	—			
VK3AIE	—	—	—	—	72	459	531	VK8	—	—	—	—	—	—	—	—	—	—	—	—			
VK3DGF	—	360	—	—	—	—	360	VK8	—	—	—	—	—	—	—	—	—	—	—	51874			
VK3SV	—	240	—	—	—	—	240	VK8	—	—	—	—	—	—	—	—	—	—	—	35230			
VK3NDG	—	—	—	—	—	—	—	VK8	—	—	—	—	—	—	—	—	—	—	—	36706			
VK3CEE	—	—	—	700	36736	70863	106299	VK8	—	—	—	—	—	—	—	—	—	—	—	270			
VK4SF	—	—	—	990	10320	97902	109212	ZL — Phone	100	80	20	16	10	Total	—	—	—	—	—	—			
VK4AOP	—	859	—	—	9144	58625	89318	ZL1ADI	—	—	—	291456	710682	158510	558848	—	—	—	—	—	—		
VK4NHU	—	—	—	—	—	72	36300	ZL1AZV	—	—	—	541974	—	—	—	—	—	—	—	—	—		
VK4NPU	—	—	—	—	—	14880	16851	ZL1AZW	40	848	4488	87362	287038	175764	53230	—	—	—	—	—	—		
VK4UU	—	—	—	—	—	—	—	ZL1ANH	—	—	—	—	—	—	—	—	—	—	—	—			
VK5OU	—	—	—	—	70584	72	2375	ZL1AKY	—	—	—	5890	—	—	—	298452	303962	—	—	—			
VK5ABW	—	—	—	—	—	56360	—	56360	ZL1BHQ	—	220	—	60132	2320	80190	162682	—	—	—	—	—		
VK5NVW	—	—	—	—	—	2112	63114	ZL1BAK	—	—	—	11440	3015	3140	17812	—	—	—	—	—	—		
VK5DZ	—	16	1856	11970	39804	53648	53648	ZL1BAS	—	576	100	1900	4446	4448	11504	—	—	—	—	—	—		
VK5DR	—	—	—	4365	—	—	—	ZL1BAS	—	2980	—	—	—	—	—	—	—	—	—	2980			
VK5DQ	—	—	—	1300	1440	1080	8320	ZL1BHR	—	2450	—	—	—	—	—	—	—	—	—	2450			
VK5NMQ	—	—	—	—	—	1012	60	1072	ZL1BQO	270	—	—	—	—	—	—	—	—	—	—			
VK5RK	—	—	—	144	284	—	508	ZL1CJ	—	10	—	—	—	5328	6885	12163	—	—	—	—			
VK5BT	—	—	—	289	—	—	296	ZL1CJ	—	—	—	—	—	—	—	—	—	—	—	Check			
VK5NE	—	—	—	19809	8622	221841	251163	ZL1CW	—	—	—	4580	85355	712112	130152	342369	—	—	—	—	—	—	
VK5NEX	—	—	—	—	—	—	152368	ZL1DI	—	—	—	—	—	—	—	—	—	—	—	—			
VK5NBU	—	5	—	—	33448	102480	134933	ZL1HL	—	30	2112	17072	107678	1512	128404	—	—	—	—	—	—		
VK5NCW	—	—	—	—	—	—	118542	ZL1HQB	—	—	—	13984	16160	6790	78435	115279	—	—	—	—	—	—	
VK5FS	—	—	—	13448	798	49104	63348	ZL1HVY	—	20	100	5336	—	—	—	23908	29364	—	—	—	—		
VK5NDZ	—	5	—	—	6144	51800	57749	ZL1IMQ	—	—	—	3888	3700	12	7600	—	—	—	—	—	—		
VK5NZ	—	—	—	23450	—	—	23450	ZL2BR	—	—	—	—	62082	62952	22401	147415	—	—	—	—	—	—	
VK5NAY	—	—	—	—	46	258	304	ZL2ACP	—	—	—	91440	91440	—	—	8858	—	—	—	—	—	—	
VK5ERI	—	—	—	—	—	—	—	ZL2AGY	—	20	1900	44908	41760	—	—	38957	Check	—	—	—	—	—	—
VK7NFR	—	5	—	—	—	1334	210	1549	ZL2ATP	—	30	24087	14840	—	—	—	—	—	—	—	—	—	
VK7NJC	+	120	—	—	—	2350	3510	5880	ZL2GZ	—	30	34544	52326	15072	432	1033204	—	—	—	—	—	—	
VK3CRJ	—	—	—	—	—	—	—	ZL4HA	—	30	34544	52326	15072	432	1033204	—	—	—	—	—	—		

VKBXW

VK → CW							VK			CW		Phone		CW		
Cell	160	80	40	20	15	10	Total	3OT	546608	0XA	219147	1AD1	558648	1AD1	265360	
VK1FT	—	—	—	2436	128	2775	5339	2XT	379600	2APK	183601	1AZV	541974	2BR	147415	
VK2APK	—	—	—	62464	73706	47411	183601	3AMK	255642	3MR	148044	1AKY	298452	1AD1	114030	
VK3GW	—	5	6144	11088	33250	11868	62355	2AJMK	236692	4XA	112230	1BQD	175764	2ACP	91440	
VK3AOF	—	—	—	15360	8112	24552	48024	6NE	221841	2APK	47411	1AD1	166510	1BCG	78435	
VK3BQQ	—	75	3860	23160	10836	—	37571	16M							107878	
VK2BAC	—	—	—	—	16728	—	16728	3OT	546608	2APK	73706	1BQD	267036	1IL	107878	
VK3MR	—	—	—	—	—	146044	146044	2XT	379800	4XA	56440	2AH	143510	2BR	62952	
VK3AYO	—	5	23540	14280	3762	540	42127	2NZU	136192	26W	33250	2ACP	112112	2AGY	41760	

26m	
IBC	86480
SOU	70584
BGB	62085
40m	
BGB	224
3AUQ	36
SZ	16
80m	
SXB	2080
3AWQ	1450
4AGP	850
160m	
—	3CM
—	SDQ
—	4KA
GRP	
BNDZ	57749
RNEB	1968
3AWQ	1482
SWL	
DEERS195	11873

Brief comments from the Contest Manager:

1. Too many late logs—all from VK
2. General acceptance of the new scoring system.

In this efforts were made to make the scoring effective and multi-band attractive without overloading this. Possibly contact scores for bands

AWARDS COLUMN

Bill Verrall VK5WV

7 Linc Ave., Flinders Park, SA

Readers will observe that I have taken over the job of Federal Awards Manager from Brian VK5CA after a certain amount of persuasion on his part.

On behalf of all the members of the WIA and the readers of Amateur Radio, I thank Brian for a good job done over the past five years. No doubt we will hear more of him on the air in the future. I will endeavour to keep up an interesting standard in this column.

AUSTRALIAN AWARDS

It is my intention to compile an updated list and give maximum publicity in this column to awards issued from within VK. As awards are created, deleted or rules updated, I would appreciate it if you could publish them. Awards which are available from other countries will continue to be featured from time to time. The recipients of awards issued by the WIA will be included in this column at six monthly intervals.

DXCC TALLIES

I propose to update DXCC scores on the 30th June and 31st December for publication in subsequent issues of AR. This will include the top 12 call signs in each section. If there is sufficient publication space, I may also list the top 10 for DXers who are lower down the DXCC listings. This may exhort some of these operators to try harder.

AMENDMENTS TO DXCC LISTINGS

All DXCC tables are being progressively amended to include these latest amendments to the listings. The current country total is 318 and deleted countries now number 46.

ADDITIONS

STO — Southern Sudan — only contacts made from 7-7-72.

4U1UN — United Nations Headquarters, New York, USA — only contacts made from 4-2-78.

DS, 7, 8 — Comoros — only contacts made after 5-7-75.

FH — Mayotte — only contacts made after 5-7-75.

DELETIONS

EA8 — Rio De Oro (Spanish Sahara) only contacts made before 1-6-78.

FH8 — Comoros — only contacts made before 6-7-75.

CR8 — Port Timor — only contacts made before 15-9-78.

VQ8 — Aldabra, VQ9 — Desroches; VQ9 — Farquhar — only contacts made before 26-6-78.

RTTY TALLIES

There has been an explosion in interest in this mode over the past four or five years, no doubt due to the ready availability of Morse page printers from disposals sources and suitable terminal units in kit form. A vast array of commercial equipment is also available from commercial houses in VK. Other operators have found it necessary to try RTTY because of their interest in microprocessors. Some have discovered that there are no real difficulties in the technology involved.

With the object of creating more interest in this mode, I have decided to publish the confirmed tallies for RTTY operators who send me details. At this stage I do not require the QSLs. It will be sufficient proof to me if I have worked or printed them on RTTY. If there is enough interest in this proposal it may be a future proposition to approach Federal Executive to create an award for RTTY operators. As a suggestion I would envisage the issue of an award for 25 countries confirmed plus stickers for every additional 10 countries and with CCR rules to apply. I invite any comments on this proposal.

Here are two scores for a start.

CONFIRMED ON RTTY

VK5RY — Tally 47

VK5WV — Tally 20

SSTY

Is there any interest in an award for this mode? Although I am not an enthusiast, I would be pleased to receive any comments.

Finally, here are the details of an award for RTTY operators.

EUDR AWARD

The Deutscher Amateur Radio Club (DARC) issues the Europäischer RTTY Diplom (EUDR) to promote RTTY activities. The award is presented by the Deutsche Amateur-Fernmelde-Gruppe (DARG) and is available to all licensed amateurs who use RTTY. The award is issued in three classes for working European countries and prefixes.

Class 3: 100 prefix points in at least 20 countries

Class 2: 150 prefix points in at least 30 countries

Class 1: 200 prefix points in at least 40 countries.

The European countries are determined by the WAE country list. Each official European prefix counts one (1) prefix point per band.

All bands may be used. All QSL cards must confirm two way RTTY and be dated after 01 January 1965.

Contacts during the annual RTTY WAE DX contest can be used in lieu of the QSL cards provided the log of the requested station is also received. Do not request such until after the contest results have been published. The requests must be made within two years after the contest.

To apply for this award submit the necessary QSL cards with your application with a fee of 8 IRCs to:

could require revising but changing conditions could alter things again.

3. Inability of some to read and understand the rules!

4. General lack of support for QRP.

5. In general — a dropping off of CW operation.

6. Great support and results from VK "Novice" area.

7. There is a problem of costs — certificates, results duplicated for winners, postage, etc. etc., especially when district/band place awards are made. There are 70 mailings for VK/ZL alone.

8. The compilation of a big contest log is a time consuming task and is not appreciated. This is the lot of the Contest Manager, who has many logs to deal with — many shapes and sizes; variations of setting out, degrees of legibility (10), etc., etc. Even so mammoth logs from operators like VK4XA and ZL1ADI were models.

9. Maybe there should be a contest division for the VK "N" calls, but the scores from some of these stations is very commendable.

73 and good operating.
Jack White ZL2XJ.

DARG
Award Manager
Postbox 640323
D-6000 Frankfurt 84
West Germany
Good hunting

GEMIFELDS CENTENARY AWARD

To mark the 100th year of the discovery of sapphires in the Anakie-Rubyvale region of Central Queens and

Period of Award: From 2000Z 16th August, 1978, to 1800Z 25th August, 1978 inclusive.

Contacts: (a) VK, DX and SWLs. Work or hear ALL four (4) Novice stations of the Gemifelds Radio Group on 3.825-3.825 MHz, 21.125-21.200 MHz, 28.000-28.000 MHz, any mode. (b) Z calls. Work VK4ZB1 on 55.100 MHz up, SS or AM, VK4ZB1 on 144.100 MHz, SSB or AM, VK4ZB1 on 148.500 MHz FM, DX or VK cal areas.

Cost \$2.00 or 10 IRCs
Logs: Send to Gemifelds Radio Group PO Rubyvale 4702, Old, Australia.

Closing date October 31st, 1979

Information required: List of stations worked, name, call sign, date, time in GMT, mode. No QSL cards required for award.

An attractive certificate will be issued to all making the required number of contacts. So be it. It won't be available for another 100 years QSL cards will be sent to all contacts made.

WORKED ALL QUEENSLAND "VK4" AWARD

This Award is divided into two sections
(a) WORKED ALL CITIES AND TOWNS
(b) WORKED ALL SHIRES

2. Any transmitting Amateur or Listening Amateur may apply for this Award, provided that these applications comply with the Rules.

3. Only one Award is issued, but this will be updated upon receipt of further additions.

4. WORKED ALL CITIES AND TOWNS
There are 20 (twenty) Incorporated Cities and Towns in Queensland —

Brisbane, Bundaberg, Cairns, Charters Towers, Dalby, Gladstone, Gold Coast, Goondiwindi, Gympie, Ipswich, Mackay, Maryborough, Moranbah, Rockhampton, Roma, Thursday Island, Toowoomba, Townsville, Warwick.

Initial Award Fifteen contacts with Radio Amateurs operating from these Cities and Towns. A "silver sticker", if ALL Cities and Towns are worked.

5. WORKED ALL SHIRES
There are 113 (one hundred and thirteen) Shires in Queensland. The population figures in these



Eric Jamieson, VK5LP
Perth, Western Australia

AMATEUR HAMWORLD

Freq.	Call Sign	Location
60.023	H2ZPR	Hall
60.025	6Y5RC	Jamaica
60.066	WA1ENX	Maine
50.060	T12NA	Cost Rica
50.067	WA6HBB	San Diego
50.068	WA6LJN	New Brunswick
50.085	WA6JRA	Los Angeles
50.090	WT7KMA	Oregon
50.094	GK5UJH	Guam
50.101	FO5DR	Tahiti
50.104	HK4EIQI	Pearl Harbour
50.110	HL8WV	Bequia
50.110	KQ5DXD	Guam
50.111	JO1YTA	Marcus Island
50.112	KH6HMK	Marshall Island
50.113	KA1R	China
51.999	YJ5PY	New Caledonia
52.200	VK5KVF	Darwin
52.300	VK5RTW	Perth
52.350	VK5RTU	Kalgoorlie
52.400	VK5RTT	Launceston
52.440	VK5KRT	Townsville
52.450	VK5WV1	Sydney
52.500	3Z2AA	Fiji
52.500	JA1R	Japan
52.500	ZL2VHF	Palmerston North
52.510	ZL3MHO	Mt. Clunie
52.520	VK5RTW	Albany
52.530	VK5VFT	Ventnor
52.540	VK5VFT	Mt. Lofty
52.550	VK5MKA	Marsden
52.550	VK5WV1	Sydney
164.101	VK5RTW	Mt. Mowbray
164.475	VK5RTA	Cairns
164.500	VK5RTW	Albany
164.700	VK5VFT	Ventnor
164.800	VK5VFT	Mt. Lofty
164.900	VK5RTW	Unparside
164.900	VK5VFT	Parkside
165.100	ZL1VHF	Auckland
165.102	ZL1VHF	Wellington
165.200	ZL2VHF	Wellington North
165.300	ZL3VHF	Christchurch
165.400	ZL4VHF	Dunedin
432.400	VK4NRB	Brisbane
432.450	VK3RPX	Brisbane
432.475	VK7RTW	Unparside

Alt 1000 to the beacon listing this might consist of the removal of VHF/UHF as it definitely not operating any more. I am also at my wits end trying to make sense from what is present. David VK5CK has just returned after visiting the Cook Islands and reports first hand on the situation. HL8WV is not listed on the 52 MHz list, though still shown on 50.110. Operation by this station seems to be on a rather spasmodic basis, since no one has ever reported it as a beacon, and as far as I know has never been heard in southern regions even where there have been massive openings to Japan.

There's a report in the February issue of "The Ham" that some amateur will be operating on 100 MHz in a short time period. Will be interesting to hear from them on the 50-52 MHz. That's good news, I hope those responsible will see that I am amongst the first to be informed so it may be given listing. Full details please.

I would draw your attention to the fact that many of the beacons I had from overseas countries are operated by amateurs themselves on an extended basis so are not necessarily true beacons operating on a 24 hours a day schedule. Nevertheless, they do fill in gaps in geographical areas of interest and could well be heard when conditions are right. Hence in most cases they are worthy of inclusion in the list at this period.

THE SCENE IN THE SOUTH

As David VK5CK is still home from University and has many opportunities of keeping a watchful ear

on the bands, I have asked him for a further report this month, which covers events from 1-179 to the end of February, though the last week of February went very quiet on all bands.

David reports as follows: "It remains to be seen as to whether indications shown in this period will spell out real DX for this equinox. On a casual observation February 1978 had been three weeks more decent Type 1 TE openings (i.e. afternoon) than as far as February 1979. However, February 1979 was much more extended Type 2 openings at night, and also very good daytime F openings. Rumours spread about beacons being heard. To clear a few points. It would seem that the period 5-12 to 22-12Z drew reports on T12NA and WA5JRA. Two VK3s and a VK7 have heard T12NA at times around 1400Z. WA5JRA apparently has not been as consistent in these reports and no tap evidence exists to my knowledge. Of course, if you listen long enough, KKH6 will come through and often quite well and some think this is the reason for many openings from September to December 1978. Now back to T12NA. Reports have cropped up from one or two areas that appear interesting. One apparently an IF break-through with a 28 MHz to 6 metre transverter! Other times, weak, G5BRV TV spots have given some a scare. However, I have a tape of what looks to be the beacon sending TEST T12NA. KKH6 has appeared a couple of times this year but no reports appear to be hearing T12NA. The heard, apparently, VK3 in early February around about the same time KKH worked K7, VE7. Just remember also that weak CW on any of these frequencies may be a JA in GSO with JA, etc., just because it may be an international beacon segment doesn't mean that everyone stays out of it, so be sure of your CW. Also a lot of listed beacons are normal stations and some only operate on an extended basis.

VHF/UHF DX SUMMARY

"Following is a summary of VHF/UHF DX and otherwise drawn from several logs. 1-1 and 2-1 saw large 50 MHz openings to Japan though S2 52 MHz saw very little. VK20B was worked from VK5 040Z onwards. 3-1, 4-1 and 5-1 saw some good tropo on 2 metres to VK5 but unfortunately not many stations were worked from VK3 except the usuals 6-1 saw FK8, Y8B and JA to VK5, 7-1 YJ8 and JA to VK5, 8-1, 9-1, 10-1, 11-1, 12-1, 13-1, 14-1 good 1-1 YJ8, 1-1 YJ8, 1-1 YJ8P appearing several times. For the next several weeks the new YJ8PY beacon appeared on the band as many times that VK2WV now takes second place in the usual regular appearance chart 9-1 YJ8 and ZL3 to VK5 12-1 YJ8PY and YJ8PH to VK5 0010 to 0050 14-1 large ZL opening (1, 2 and 3 metres) from southern States and VK4. Most noteworthy contact was between ZL1ADP and VK5ZMO and VK5K 02 275 MHz. JA 0001. Four weak signals were heard on a voice converter with 10 to 15 watts AM 4 element yagi. Those narrow-banded (-minded) people who (a) sit talking on S2.0506 during extensive DX openings or (b) swoop on people in (4) so as they have a quiet S2.050 for their DX calls no longer think!

"15-1 JA1 and 7 from 0000 to 0100Z 5 x 8 in VK5. YJ8PY at 0032 and 0152, 10-1 JA1 and 2 0010 to 0402Z 5 x 8, 20-1 YJ8K 5 x 8 + 2 to VK5. From 20-1 to 25-1 quiet a few small openings to JA on 50 MHz at midday or around 1200Z but nothing to work. Period 25-1 to 30-1 openings to VK5 on 2 metres. VK5K/P and VK5K/P tried ATW towards east but unsuccessful. VK5KZ and VK5KZ/P worked on 2 metres. Day worked well under quiet conditions about 432 MHz. VK5KZ worked YVKGJ 5 x 8 on 432 at 1140Z on 27-1 VK5KZ having antenna problems on 432 only 5 x 3 here. VK5ZC/P inaudible during tests 29-1 ZLs 5 x 8 on 6 metres at 0036Z to VK5. Also on 29-1 very strong local tropo conditions to Eyre Peninsula, about 180 miles. IC20's being used hand held in backyards and in bedrooms with good signals. Tropo to VK3 also good at night and again around 1000Z 2000Z local time. VK5KZ has been working VK5KZ/P, Hill and VK5KZ/P, VK5KZ/P extensively in early morning, 6-weds, 2-7 a large opening to JA, 5 and 2, 3, 4, 5, 6 and 7 from 1040 to 1400Z. Signals from 5 x 3 to 5 x 8, VK5LP, VK5RA, VK5ZBU, VK5AVO and VK5KCK clocked up well over 100 contacts. It should be noted that one some of

these dates also VK1, 2, 3 and 7 worked JA although as of 15-2 JA DX quiet in Sydney Period to 10-2 with occasional JA from 1200 to 1500Z or 50 MHz.

"11-2 good opening to VK7 on 2 metres with 5 x 9 signals to VK5. Also tropo conditions on 6 metres with VK5KK and VK5AVO to VK7DA on 2 metres. VK5ZD worked VK5K, VK5AVO VK5LP, VK5ZPS and VK5ZDR from 1230 to 1315Z when he went QRT. To tap it off VK5ZGT at Port Lincoln worked VK5KZ and VK5KZ/P. VK5KZ worked VK5KZ and the VK5 repeater at Bunbury. I was told he worked into the VK5 Wag n repeater and was heard on direct path in Port Lincoln. Strange conditions indeed as from here and in Adelaid a not even the A band 2 metre beacon was audible at 1405Z on 6 metres path to Perth opened and several tests showed that 2 metres was not a goer, though the Es open on 6 metres was still a bit strange. Band closed on 6 metres at 1515Z.

"12-2 ZL2 to VK5 x 7 at 1405Z Late night JA. On 13-2 large JA opening (biggest quantities and strengths so far for the month) from 1120 to 1402Z Areas JA1, 2, 3, 4, 5 and 6. Several attempts were made to find VK5, VK5LP stations on 50 MHz but no go. Band had no openers though VK5LP and Again VK5LP, VK5RDO, VK5Z2Z, VK5ZER, VK5ZK and VK5K working on 6 with two Okinawa stations and worked. Also VK1RK and VK5ALG heard being worked but none of the usuals from VK5 VK5RO heard DU2?? in reply to ONZ, but possible in VK5 VK5LP, VK5Z2Z, VK5ZER, VK5ZK and VK5K working on 6 with two Okinawa stations and worked. Also VK1RK and VK5ALG heard being worked but none of the usuals from VK5 VK5RO heard DU2?? in reply to ONZ, but possible in VK5 VK5LP, VK5Z2Z, VK5ZER, VK5ZK and VK5K working on 6 with two Okinawa stations and worked. Also VK1RK and VK5ALG heard being worked but none of the usuals from VK5 VK5RO heard DU2?? in reply to ONZ, but possible in VK5 VK5LP, VK5Z2Z, VK5ZER, VK5ZK and VK5K working on 6 with two Okinawa stations and worked. Previous week VK5 and KL7 from 0000 to 0500Z.

"14-2 JA1, 2, 3 and 6 from 1300 to 1420Z on 52 MHz. Flipping the switch to 60 MHz gave another 99 minutes of entertainment with JA8 working their local DX. Even by 1515Z they started going QRT and one or two kept on having local QSOs. Listening to one Japanese conversation, I suddenly heard VK5RO mentioned! For moment I thought Col was up to something (TL), but with all those big wave listeners ... BLP? However, however, it was Col who was in fact the one who was VK5RO earlier on. They want QRT at 1500Z and nothing else seemed to come through in the 50 MHz rag on so I went to bed! Wouldn't it be nice to have 50 to 54 MHz? Most VK5s and JA8s have experienced that sort of opening 16-2 which appeared to be a large solar flare with ionospheric noise, even on 144 MHz occurred from 0152 to 0157Z. Straight away VK5LP and VK5ZMO were heard on 144 hours carefully looking for DX. Below 50 MHz quite a few carriers evident with a few TV types that don't fit into somebody's list. All came from the north. A further five JA8s were worked amongst other JA7s and JA6s Band QRT at 0402Z JA8 uses that night 17-2 band open to JA around 0645Z on 52 MHz but no one tried to work them even though they were talking on Japanese on that SACRED S2.050 Again JA on 60 MHz sat at night.

"Just lately while working JA on 6 metres it is usual to hear some JA or 50 MHz keeping two separate systems going can be very interesting as the better ones stay on 50 MHz to listen and while in GSO with the others on 60 MHz. Many times I heard JA calling over in 144-5 element south trying to have an -n interrupted QSO on 50 MHz. We think we'll have when the same thing happens there I think it will indicate that overall it's a equinox will be 100 percent up on that 12 months ago. As far as JA is concerned, well take it or leave it, but with an Es extension both ends and a reasonable Type 1 JA from 0300 to 0400Z could show promise. But I don't think it will be until the first half of March before we can hear JA from 0600Z. However, just remember that about 0700 to 0800Z is about 11 pm to 3 am. West Coast time so the time difference will play a part in activity.

"And what about Magnetic Field Aligned Irregularities? One well known VK2 expert on TEP says it is rubbish but overseas experts do say that it does give some explanations to the recent 2 metre DX 'Sough' of 'out with the old ideas and in with the new'. This cycle will make or break that one.

THE LOCAL SCENE

"Quite a lot of interest is brewing on 8 and 2 metres. More and more stations are becoming involved in DX and some of these are relatively new calls, who are developing acute awareness to VHF DX as apart from the well known HF-syndromes. For 200 to 400 watts are taking over for the coming year. I expect this is common throughout the country and it will be interesting to see the re-emergence of Melbourne stations on 6 metres when the 'Big C' disappears later this year. Let's also hope two metres will see a similar revival from that area as it is disconcerting to hear the only readable Melbourne stations on 144.3 MHz busy making ATV contacts, too busy it would seem, on several occasions, to bother about other DX. Between VK5KRO and myself we have had only two contacts to Melbourne on 144 MHz this season and it wasn't exactly the propagation which let us down. Plenty of other contacts are to be had to inland VK3s, Broken Hill, VK6 and VK7.

"One local contact of interest was on 11-2 with Mike VK5ZMI on 432.1 MHz. Mike was using a new IC420 hand held inside his first storey flat at St Peters, Adelaide. 60 km path signals 5 x 5. This contact nevertheless is not unusual as previous times I have worked Mark VK5AVQ when over a slender distance he was using a groundplane antenna mounted on a bench supply in his shack. It goes to show, however, the interesting properties of the shorter wave lengths as far as penetration goes in built-up areas. Signals on 2 metres under similar conditions are never better except when a great deviation from line-of-sight occurs. Some mobile experiments on 23 cm have also shown this and for on line-of-sight communications a bit of power is needed to gain some more coverage from reflection and refraction. By the way, mobile flutter on 1295 MHz was interesting. Just imagine the difference between 144 and 432 and then multiply the resultant factor (3) to get the flutter rate on 1295, not unlike a good buzz!"

Thanks, David, for filling in the gaps in my information, and for the observations you have made. There is little doubt that the erection of stacked 8 over 8 antennas at the VK5KKK QTH for use on 6 metres has paid dividends for TEP signals. The lower angle of radiation and reception of these antennas are consistently giving David a grail at 3 to 4 S-units stronger than my large single 8 element yagi on a 25 foot boom will give. I am hoping to have a similar array soon and it will be interesting to compare the results then.

SILENT KEY

Norman Surten SBS11464 from Revesby, NSW, writes to say Bob Grimm K6RNG joined the ranks of Silent Keys on 13-17-79, following a massive heart attack at the age of 46 years. Bob was extensively known throughout the VHF world for his contributions to the art, and his passing will be a sad loss for all concerned. Bob had written to me (SLP) previously and indicated how much he was looking forward to working into Australia from the USA on 6 metres during this cycle. Such is life.

ZL UHF ACTIVITY

Vic VK5ALU has sent copies of information contained in "The Propagator" and concerns the 70 cm opening to New Zealand and at the time of the large 2 metre opening in January Lyle reports hearing the Palmerston North beacon on 432.250 MHz between 2325 EST on 9-1 and 0015 EST on 10-1 at a consistent S4. It identifies ZL2VHP using FSK. Signals were taped CGs on SSB and CW produced no results. An earlier knowledge of the opening may have produced a contact with one or more of their higher powered stations.

Lyle received a letter from ZL1THG of Hamilton, NZ, reporting a copy of VK5ALU on CW at S1-2 on 432.250 MHz on 10-1, which corresponded with the times Vic was calling CQ on this frequency (0715 to 0745 EST). ZL1THG called without success, running 3 watt output.

Other information included by Lyle is a list of ZL repeaters numbering 34 stations, mostly FM but a few on AM SSB calling frequencies in New Zealand are 50.2, 144.2, 432.2 and 1296.2 MHz. Tom ZL1THG sent a list of 70 cm stations in New Zealand, some of which are included here for your future information. ZL1TAB 10W SSB, good QTH. ZL1MD AM and CW, also on 1296. ZL1MQ 20w AM/CW plus 1295. Good QTH. ZL1THG 3 to

30 watts AM/SSB. Poor QTH, but able to go portable. Also has 1296, 2304 and 5000 MHz ZL1ATV 10W SSB/CW. ZL2TFJ high power SSB, good QTH. ZL2TAL 10W on 432, 1296 and 2304. Can go portable. ZL2TR has ATV in colour, Inc repeater, ZL3AA and ZL3LS AM and ATV. ZL4LV and ZL4LS SSB/FM.

MICROWAVE TEST

A test was made on the 10 GHz band on 15-1-79 between VK5DYY portable on Saddleback Mountain, south of Kiama, and VK5ZY/M/VK5AHC at Collaroy Plateau, northern suburbs of Sydney. The test was to try an all land path rather than the all water paths along the South Coast tried last year. No contacts were made possibly due to path obstructions. All the gear used was made by Des VK5AHC from "The Propagator".

NEWS FROM THE WEST

Wal VK5HZ has written an interesting letter and here are some extracts other than the 1295 MHz mode, breaking contact with CW and VK5AC which have been covered before. During the annual pilgrimage to the south-west corner of VK6 he was not able to reach further on 432 MHz than Ash Bay VK5XLY had done the year before, taking the record. He was unable to work Lake Wabby VK3ZBZ for some reason, and VK5YRLR did not have 432 when operating from the Dandenongs.

Looking to next year Wal indicates an interest in trying some east/west contacts from Cape Leeuwin, which is about as far west as one can go comfortably! In addition to seeking contacts to the west, he proposes trying the path to the north, as he has found the trough across the Great Australian Bight appears to coincide with the formation of a trough up and down the WA coast producing good signals between Perth and Carnarvon, and Bunbury and Geraldton on 144 MHz. With reports of high channel TV (190 MHz) from Indonesia being received at Exmouth near North West Cape who knows what can be worked. Maybe he can give the Albany boys a run for their money from Perth? Additionally, he is priming up for 2304 MHz contacts, with converter and antenna so far, plus a transmitter which can be provided by Don VK5HFK. Also looking at 3.3 GHz!

On 27-1 Don VK6HK and Wal VK6HZ went portable again to Walpole, and made contacts with VK3 and 5 on 144 MHz. Les VK3ZBZ was heard on 432, but Les was unable to hear Wal, although heard in Mt. Gambier by Colin VK5DK and also VK5DA. On Sunday 28-1 besides working VK5CPH and several VK5s on 144, they moved from Walpole to Mt. Burrendale, about 60 km inland with an approx. 145 km track across land to the sea, and worked VK5AC and VK5ZPS. This is the furthest west they have so far traced the tropo openings. Bob VK6ZLG is reported to have heard VK5VK beacon on 144.8 the same day from Kullukup, further inland and to the north-east of Mt. Burrendale, but no contacts. The whole trip involved over 900 km of travelling by this dedicated vehicle.

Wal concludes by saying he is totally unenthusiastic about the present Ross Hull Contest which, with its altered rules, has destroyed any recognition of distance, propagation and frequency as the dominant features of the points table. He is disappointed with the rules, having been an ardent supporter of the contest since becoming licensed as VK5ZL in 1954. I fully concur with these comments. There is certainly no incentive for stations to go out portable any more (so much so that I am considering selling my alternator), and home stations still actively participate in giving numbers and thus keeping up the overall activity on the bands, but refrain from putting in logs in view of the effort involved for such small scoring returns.

EXTRA SEACONS

Bill Tyhan VK3XO, Conductor of "The World Above 50 MHz" in "QST" sends a list which contains a few extra beacons which you may care to note on your lists. They include 50.029 ZS8WP/ South Africa; 50.035 ZB2VHF Gibraltar; 50.100 ZS6VHF South Africa; 50.103 N8AJD Ohio, USA; 50.110 KBG90 Salpam and AL7C Almazka. He confirms that 6Y5RC Jamaica, TI2NA Costa Rica and ZB2VHF Gibraltar are operating. Thanks, Bill.

I had a contact with Bruce VK4ZBG/C on 3-2-79, who was contemplating whether he should try operating maritime mobile if he should try finding

Julia Creek on whose banks he had been camping for three days waiting for the water to go down! ... pleasing to see Dave VK4ADL on from Longreach, hope Alan VK4ZJS can be persuaded to come on from there as well Hal VK4ADO reported he had been on the air for 58 years, and had been made a Life Member of the Central Queensland Branch of the WIA and was their first Life Member. Congratulations, Hal JA2ZBZ had worked 27 countries on 8 metres as of 3-2-79, which must rank as an outstanding effort and shows what you can do if permitted to work on 50 MHz! He needs H44DX in the Solomons and VK8N1 Norfolk Island to complete about all there is for the time being during November KG6 worked VE7BLF, and W6XJ worked KOBJH and KG6DX, all on 50 MHz of course David VK5CK, just back from Cook Islands reports ZK1AA has a 7 helical antenna for satellite working, a 64 element antenna for 2 metres, and an 8 element LP yagi on the ground for six metres! But no beacon VK5RKO reported hearing of contacts between Gladysland, possibly on VK3 and ZL on 2 metres early February, possibly on Channel 40 — no further information obtainable on this TV sound on 44.250 MHz is from *HLKA* in Korea — often very strong around C300 to 6500Z.

ABOUT 32.050

Hassles seem to arise from time to time over the usage or non-usage of the 6 metre calling frequency of 52.050 MHz, to the extent that I received a report there were moves by a VK3 operator to start another calling frequency on 52.055. Such a move is to be deplored as only of recent times have we been able to spread the news satisfactorily overseas that our calling frequency is 52.050, and I would appeal to the VHF fraternity to keep 52.050 as the calling frequency and not start fragmentations of the band. With the first of the 1979 equinoctial periods right on us and with the cycle 21 peak just around the corner, any moves for such changes must be resisted strongly.

Personally speaking, I see the use of 52.050 in the following manner and I believe these views are supported by quite a number around me:

1. The main idea of having 52.050 MHz as a calling frequency was to use it as such, ie overseas and local stations who would be seeking a contact would first of all carefully monitor the frequency (under the terms of your Licence) and if not in use a call would be made or if in use a call made to the station operating on that frequency for a contact.

2. If the call results in a DX contact, especially if overseas, then it is likely the contact will be a brief one, in which case there seems no reason why the contact cannot be continued for a short period and concluded on the call frequency, thus alerting other listeners to a possible contact.

3. If an answering station is a local station and the contact desired to be continued it seems courteous to other band users to shift from the call frequency. If you feel there are possibilities of DX being around then you can either make the contact brief and return to make a further call on the call frequency or make a shift to, say 10 kHz which leaves you close enough to the call frequency to be heard by a searching station, but far enough away to not interfere with a station on needing the call frequency. This same situation exists in the case of Es contacts, having established contact move off the call frequency particularly if it is a general band opening.

4. The action of some high powered stations sitting on the call frequency and using it to the exclusion of others in the hope they will be the first to be heard by some other user, in other words, keeping the frequency clear only for themselves, is also to be deplored. This has happened, and it is shameful operating and is to be mainly noted during periods of Es openings, and the tactics of some stations have been noted here for future reference.

5. 52.050 is not a sacred frequency, as David VK5KK points out but should be used serially and with due regard to others, but as we are all different and some people will always have questionable operating habits, then we need to be tolerant of the shortcomings of some, but none of these reasons give sufficient strength for any start to be made towards another call frequency, let everyone forget it and do the right thing on 52.050.

Having said all that, let's close with the thought for the month: "Maturity begins to grow when you can sense your concern for others outweighing your concern for yourself."

73, The Voice of the Hills.

COUNTRIES ACTIVE ON SIX METRES

From SMIRK comes a listing of countries which are active on six metres. This listing of 42 countries does not include any expeditions or other planned activity. With the current sunspot cycle it should present a unique challenge to DXers unlike the bottom DXCC of the FH bands.

The list is as follows:

CE—Chile, FO8—F Oceania, HH—Haiti, H44—Guadalupe, KW, etc.—US, KH6—Hawaii, KV4—Virginia, KJ—Neth. Ant., TG—Guatemala, VK—Australia, VP2—St. Lucia, VP3—Barbados Is., YU—New Zealand, ZL—Zambia, ZL—Zimbabwe, ZA—Zambia, PY7—Fr. Guiana, HK—China, JA—Japan, KG—Guinea, KL7—Alaska, K25—Carib Zone, PY—Brazil, T—Costa Rica, P29—New Guinea, VP25—Si, Vincent, V56—Hong Kong, VY—Venezuela, ZB—South Africa, PK5—N. Caldonia, HK—Ecuador, HL—Korea, JD—Guassuara Is., KG8—Spain, KP4—Puerto Rico, LU—Argentina, P21—Sur. Amer., VE—Canada, CA—Bahamas Is., XE—Mexico, ZB2—Gibraltar, SC2—Fiji Is., BY—Uruguay.

From the SMIRK newsletter comes a warning to anyone writing to BV2B on Formosa. Apparently you should not put his call sign on the outside of the envelope. Remember in many countries call signs on envelopes can lead to trouble for the station concerned. So when BV2B is on 6 send your QSL in a plain envelope.

6 METRE LIAISON NET

A 6 metre liaison net is on 28.865 MHz. This is to co-ordinate listening and calling schedules and reports of 6 metre propagation. WBXJ is on most weekends. A net on the West Coast of the USA meets at 2100Z Sunday, which is Monday morning in Australia.

STOP PRESS

6m DX TO USA

Bruce N6CT, 60 miles north of San Francisco, was worked on 28.060 MHz by Ed VK4ZEE, Hel VK4DO, Neville VK4ZNC, and Dave VK2ZDK/4 on 2nd March, 1978, at about 0800Z.

Signals to 8 x 9 at VK4DO, who also worked N6CT with his IC502.

Also . . . on 12th March, W8XJ, N6CT and others worked VK3AU1, VK3AUQ, VK3ZZX, VK3AGR, VK3AMK, VK3AKK, VK3OT.

Contacts started with W8XJ and VK3OT at 0830K and lasted till 0835K.

JAs and KQ8DX were worked during the evening.

These are the first VK-USA contacts for cycle 21.

QSP

WHEN NOT TO USE THE GREAT AUSTRALIAN ADJECTIVES

Amateurs everywhere are reminded that we are supposedly "self-policing". Notwithstanding all the amateurs (or a few) on the local airwaves of late, have been prone to unthinkingly making use of a range of innocent great Australian adjectives. If you hear some then you will be doing amateur radio a favour by inserting a gentle type reminder: "This is an amateur radio."

DESCRIPTION

Directed to Bob VK2ZRN was the observation by Grah VK2ZG, "Your sopra was up and down like a lot seat at a mixed party" — From "Seniors Signals", Dec '78.

Around the trades

NEW LOW PRICED AMATEUR TRANSCEIVER FROM ATLAS RADIO INC.

Atlas Radio Inc., USA are due to release a new Amateur transceiver line in Australia through their Australian agents, GFS Electronic Imports, in early April.

This new transmitter/receiver range, known as the "Atlas 110 Line", consists of a high performance amateur band receiver, the RX-110, covering 80 through 10 metres, and two "bolt on" transmitter modules, the TX-110L and TX-110H which, when combined with the RX-110, produce a high performance low cost transceiver. The TX-110L is a low power module having 15 watts input, while the TX-110H runs around 200 watts input.



Overall size of the combination is only 31 width x 9.5 height x 24.8 deep cms, which makes the Atlas RX/RT-110 ideally suited to a mobile installation.

Initially only the high power RX/TX-110H transceiver combination will be available from GFS Electronic Imports. Its expected price is around \$499.

For further information on the Atlas 110 line and its accessories contact GFS Electronic Imports, 15 McKean Road, Mitcham, Vic. 3137. Phone (03) 873 3928.

HY-GAIN PRODUCTION UP AND NEW LINES ADDED

Since the re-opening of Hy-Gain Electronics in the USA, orders have outstripped production, according to the new Australian distributor, Audio Telex Communications Pty Ltd.

"We are all delighted with the speed in which Telex Communications were able to restore production and re-introduce the fine range of Hy-Gain antennas," said Rod Craig, General Manager Audio Telex.



Apart from re-establishing existing lines, Hy-Gain have announced that the Telex range of headsets and headphones and microphones will now be combined with the Hy-Gain Amateur antenna range.

Tales make a wide range of headphones and headsets with boom mics, which are specially designed for amateur use.

"We are stocking the popular CM1320 and C1320 series in sale. Mr. Craig "These models are well known in the amateur field particularly in the C1320 headset microphone with ceramic boom mic." Mr. Craig went on "I know that Telex Gains is a division of Telex Communications Inc. It is logical that products for the same market should be sold by the one group, and we at Audio Telex will be marketing these products through our Hy-Gain retailers."

ICOM RELEASES IC2028

The latest update to the popular 2m ICOM portable transceiver is the IC2028 3 watt model featuring both upper and lower sidebands. Previously this unit suffered the disability of having only one sideband.

The IC2028 also incorporates a number of circuit improvements over the IC202E and the earlier IC202.



The ICOM product range is distributed in Australia by VICOM (Amateur Radio Division), 68 Eastern Road, South Melbourne, Victoria 3205.

**HELP YOURSELF —
GIVE TO THE
WIA WARC FUND**



NEW ATLAS 110 LINE



• 200 WATTS • \$499 • 80-10Mx •



ATLAS
RADIO INC

Now, for only a fraction of the outlay previously necessary you can run 200 Watts on 80 through to 10 Metres, work CW or SSB, operate from the car or from the home QTH using the RX/TX-110H in combination with its AC Power Supply, PS-110.

RX/TX-110 Transceiver	\$499
PS-110 Power Supply	\$109
MM-110 Mobile mount	\$89

For color brochure with complete specifications write to us, phone us or just drop in and have a look at the RX/TX-110.

Why settle for a second hand FT-101 or TS-520 when you can now buy a NEW Atlas Transceiver.

NEW!! SX-100 Programmable VHF/UHF Receiver.

It had to come. A Keyboard Entry Microprocessor controlled VHF/UHF Monitor Receiver from Japan with the following outstanding features:

- 16 frequency range 20-54, 140-160 and 410-514 MHz
- 5 KHz Channel Spacing on VHF and JHF
- Covers 5, 2 and 0.7 meter Amateur Bands
- Over 32,000 Channels
- 0.5 uV Sensitivity
- 220-240 VAC and 12-18 VDC operation
- Large Green readout, showing channel number, frequency, time, day and date.



\$392.00

Write for a brochure or drop in for a demonstration of this remarkable receiver.

Come and see the **ME-2500** at our GFS Victoria's Denison Agents.

DENTRON RADIO CO.

ME-2500 2KW PEP Linear \$1190
ME-2500 300Watt Tuner/Dummy Load
Power Meter \$442
MT-2000A 3KW Antenna Tuner/Co-Ax Switch
\$270
162-100 1KW PEP Antenna Tuner 160-100 MHz
MT-100 300W Antenna Tuner and Relative Power Meter \$99
BIG DUMMY Oil Cooled 2KW Dummy Load
\$43

SCOOP PURCHASE

Tels. Models, commercial type complete with boom mounted NOISE CANCELLING MIC. Limited quantity only. Newly priced at around \$60

*** JUST \$24**

Soon available a range of PROFESSIONAL FREQUENCY COUNTERS with up to 1.25 Ghr and 0.05 PPM

IS THERE A DX 5550 FREQUENCY COUNTER SIGNAL GENERATOR IN YOUR SHACK?

If not now is the time to update your test gear with the popular instrument

Featuring a 220 MHz counter upper limit and 30 MHz generator. Generator frequency is read directly on the counter. A MUST FOR EVERY HAM SHACK.



Technical Data

0.4 to 100 MHz counter
0.4 to 30 MHz generator
50MHz tone oscillator
25 and 200MHz gating time
5 Digit LED display
Switchable KHz and MHz

This range of Semiconductor Spares available as used in YAESU KENWOOD STANAG 4296

H.F. Operates watch our future advertisements for details of a brand new revolutionary form of 10 metre communications never before available in Australia at this firm

Now available from WORLD TIME CHART 8.00G. Bureau Indicats. Yellow 20C position

10 DAY LIMITED WARRANTY APPLIES TO ALL EQUIPMENT BUT DOES NOT COVER FINALS

FINANCIAL AVAILABILITY TO APPROVED PURCHASES

Also available many other accessories

G.F.S. ELECTRONIC IMPORTS

15 McKEON ROAD, MITCHAM, 3132. (03) 873 3939

We at G.F.S. are proud to introduce a real breakthrough in versatile, low cost, Amateur Transceivers.

First came the receiver, The Atlas Rx-110. A performance plus Amateur Band Receiver incorporating high sensitivity, selectivity and dynamic range. Couple that to a "bolt-on" Transmitter Module, the Atlas TX-110H which has low spurious and harmonic radiation, high carrier and unwanted sideband rejection and 200 Watts in-put. You now have the unbelievable Atlas RX/TX-110H top performance transceiver which costs NOT \$950 NOT \$750 . NOT even \$650 but just \$499

MORE OUTSTANDING FEATURES

- Coverage 3.5-40 MHz 7.0-7.5 MHz, 14.0-145 MHz, 21.0-21.5 MHz, 26.0-29.9 MHz
- All Solid State, High Performance Design. Excellent sensitivity, selectivity and dynamic range superior to most receivers currently on the market.
- Reception and transmission CW and normal SSB, SSB on 3.5 and 7.0 MHz bands, USB on 14.0, 21.0 and 26.0 MHz.
- Standard to CW is a standard feature on the RX/TX-110H
- Built-in speaker and CW antenna
- Modular Design provides much easier service and maintenance. This is a piece of equipment that you can work on yourself if you wish, because you can get at everything with ease.
- Clock at 12.14V DC for mobile or 220-240 V AC for home operation with the Atlas PS-110 Power Supply
- Super Size RX/TX-110 measures just 31W x 10H x 25D cms

The ever popular ATLAS 210X is still available, but now at a special low price for current stock that won't last long. Be early and save over \$150.00.

Atlas 210X only \$695.00

EMOTATOR ROTATORS

MODEL 103LBX Medium Duty
Rotation torque 450 Kg/cm
Break torque 1500 Kg/cm \$169



MODEL 502CXX Heavy duty
Rotation torque 600 Kg/cm
Break torque 4000 Kg/cm \$255



MODEL 1102MXX Extra Heavy Duty
Rotation torque 1000 Kg/cm
Break torque 10,000 Kg/cm \$358



1211 Mast Clamp for 103LBX \$19
1212 Mast Clamp for 502CXX \$31
1213 Mast Clamp for 1102MXX \$48

AB-22L CDE Light Medium Duty rotator
for \$150

STANDARD MODEL

C 6500



ME-1000 COMM RECEIVER

A state of the art communication receiver covering the range 0.5-30MHz with a Wedley Loop for rock salt stability. Unlike some other receivers that use only one filter in the IF, it exhibits three filters. The ME-1000 has three filters, giving great selectivity on SSB and AM. For more details 919-19-10-02-9 batch rate.

MFJ ANTENNA TUNERS & ACCESSORIES

MFJ-941B New updated Tuner, now has 5 Position Coax Switch, more inductance as well as SWR/POWER Meter. Balun and 160-10m 300W Watt capacity

MFJ-942 Same as 941B but less Meter, Switch and Mounting Bracket \$109

MFJ-901 Same as 941B but less Meter, Switch and Bracket. 200 Watts \$95

MFJ-900 Same as 901 but less Balun \$78

MFJ-1000 0.5-30MHz 300W. Pwr 2000 Gnd 578

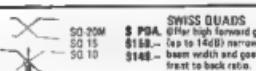
MFJ-1000 0.5-30MHz 1 to 100 MHz. Heats active Resistance 0.250 ohms and Reactance $\pm 0.1\Omega$ ohms S78

Multi-Palm II \$229.00 Inc. 1 chn. and 16 Cell Batteries

Leather Case \$11.50

Battery Charger \$9.00

Extra Channels \$3.00 per chn.



SWISS QUADS
SO 20M \$1 PDA. For high forward gain
SO 15 \$15.00 1 to 14dB narrow beam width and good front-to-back ratio.
SO 10 \$14.00

CUSTOM COMMUNICATIONS

TRIO KENWOOD COMMUNICATIONS



\$43.00

The TS 600 is an all-mode solid state transceiver which fully covers the 6 meter band. This transceiver is based on our many years of successful experience with the 6-meter band. Its features include SSB, FM, CW & AM operation with sending and receiving capabilities on 20 channels with 5 crystals. The TS 600 is an all-in-one type that comes complete with built-in speaker, power supply, and microphone. You can enjoy QSOs with domestic stations or DX especially when sporadic E occurs!

TS600
\$850.00

\$185.00



AI-200 is an antenna tuner designed specifically for amateur bands. It is an all-purpose tuner although the most common use is for 160 meters. It has a built-in 100 ohm resistor and antenna switch for 160 meters. For 80 meters, the 100 ohm resistor is bypassed.



SP 700 \$43.00

TS-700SP \$875.00

VFO-700S \$157.00

The TS 700S is the all-mode solid state transceiver that provides you versatility plus over the entire 2 meter band. Its feature packed design puts you on SSB, FM, CW, and AM. The AC and DC power supplies are built in which allows you to operate the TS 700S just about anywhere. Equipped with a VFO that enables continuous tuning from 144-148 MHz, the TS-700S comes complete with built-in digital frequency readout, receiver preamplifier, VOX, sidetone, and microphone.



SP820 \$70.00

TS-820S \$1150.00

VFO820 \$185.00

The TS-820S is a 1.8 to 29.7 MHz SSB, CW, RTTY transceiver backed by our many years of successful experience and "know-how", as well as the most advanced electronic technology. The signal circuits of both the transmitter and receiver sections are quite simplified with the employment of a single conversion system for linearity. This transceiver also employs phase lock loop (PLL) circuitry. PLL technology allows accurate frequency

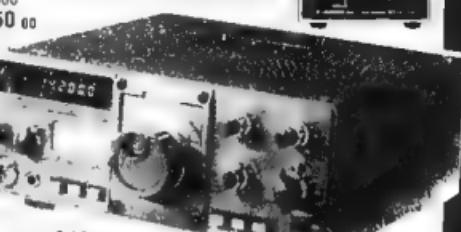


SP520 \$33.00

TS-520S \$680.00

VFO-520 \$153.00

The TS-520S combines all of the fine, fieldproven characteristics of the original TS-520 together with many of the ideas, comments, and suggestions for improvement from amateurs world wide. Kenwood's ultimate objectives are to make quality equipment available at reasonable prices. The TS-520S provides full coverage on all amateur bands from 18 to 29.7 MHz. Kenwood gives you 160 meter capability, WWV on 15 000 MHz. And with the addition of the TV-502 and TV-506 transverters, your TS-520S can cover 160 meters to 2 meters on SSB and CW.



TS2040
\$340.00

TS-120V
\$630.00



\$45.00

MC 50
50 k Ω 500 Ω
Dynamic Desk Mic



MC 20
500 Ω
Dynamic Handy Mic



\$20.00

MC 10
50 k Ω
Dynamic Handy Mic



\$26.00

MC 30S (500 Ω)
MC 35S (50 k Ω)
Dynamic Handy Mic



\$32.00
LF 30A
HF Low Pass Filter



BPF-2A
2m Band Pass Filter

DEALER INQUIRY WELCOME!

Phone: (02) 681 3544

A.H. (02) 674 1719

CUSTOM COMMUNICATIONS

TEL: 681 3544
A/H: 674 1719

No. 6 ORCHARDLEIGH ST.
YENNORA (Near GUILFORD) N.S.W. 2161

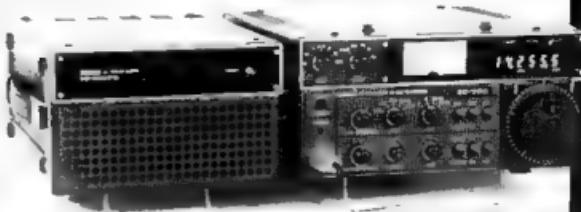


ICOM

IC-280



2 MTR FM
SYNTHESIZED \$ 450.00



1-8-30
MHZ HF

IC-701

\$ 1380.00



IC-225
FULLY PROGRAMMABLE
2MTR 10W FM \$ 330.00

PLEASE
SEND FOR
PRODUCT
CATALOGUE!



IC-211
2MTR ALL MODE \$ 799.00

— SWAN TRANSCEIVERS —



300W INPUT \$ 809.00
SSB HF TRAN.
DIGITAL DISPLAY

MODEL 350D HAS THE SAME
SPECIFICATIONS AND
CHARACTERISTICS AS THE 350B
EXCEPT THE UNIT COMES WITH A
BUILT-IN DIGITAL FREQUENCY
DISPLAY WITH READOUT TO 100HZ

DIGITAL DISPLAY
TO SUIT 700S
350B, ETC. \$ 250.00



MX-100 \$ 799.00
100W PLUS
MOBILE SOLID STATE

DEALERS WANTED
IN ALL STATES!



Championship
performance! That's
what is in a Swan
transceiver.
Engineered
completely by
Americans to be a
top performer, for
less cost-per-watt.
Swan transceivers
are designed to let
you have all the
punch and
performance
needed.

ICOM & SWAN ALSO
DISTRIBUTED BY SIDE BAND
ELECTRONICS SALES
CROWS NEST
PHONE 438 4191
FOR SWAN N.W.A PERTH
CONTACT WILLIS TRADING
PHONE 321 7609

Telex and DX

Mike Bazley VK6HD

6 James Road, Kalamunda WA 6076

I was listening around on 20 SSB the other day and came across a QSO between a VK3 and a VK7. The VK3 had recently put up a 3 element mono-bander and was detailing the DX he had worked. Unfortunately the VK7 was not really impressed because as he said "DX was not for him as he could only find room to put up a 20 metre dipole at 40 feet and did not own a linear".

I just cannot agree with this statement. If one has room to put up a dipole on 20 then one has room to put up dipoles on 16 and 10 as well. All three antennas I need be, can be fed from the same feeder. One hundred watts of CW can work the world wide.

Discussing most of the North and South Americans the majority of amateurs using the CW mode use a mixture of dipoles or ground planes and have an average power input of 50 watts. They can work the world wide, why should we not do the same?

Are you fed up with fighting the QRM on SSB? How about joining the mob on CW? It only takes a little practice to brush up that code speed, yet did it once to get your ticket so you could do it again.

May I hasten to add that I have nothing against SSB, but in circumstances of low power and non-directional antennas CW has a distinct advantage for the DX lover. As a certain CA station recently remarked to me after an 80 metre QSO, "If we had tried that on SSB we never would have made it".

Aller last month's comments on the possible abuse of nets one might think that I was totally against them. Nothing could be further from the truth provided they are well managed and a station is left to make or not make his QSO when his turn comes. For those who like to join in round table CW contacts the following should be of interest C6ACA together with FG6AYC and HR3JUR, often gather on 41450 at 1200 GMT, all are welcome. There is also the DX group, usually run by I1LLZ that meets daily on 14220 at 0700 GMT A SO look out for the Caribbean net which is now active again on 14175 from 1100Z.

P26JS is said to be holidaying in GW land at the time this was being written (late February) and rumour has it that he has all the necessary visas and permits to operate from the Andaman islands. Rumour comes as so stated that VPSU (South Orkneys) is off the air with transmitter trouble. How serious this is and whether the problem can be solved is not known.

3X11A was heard the other day and disappeared under a promoted pile up of Australians and Europeans. The writer never heard him again and doesn't know whether this is a genuine operation or not. The time was 2000 GMT or the low end of 20 CW.

V83BVK4u has been worked from VK8 on 80 SSB. His location counts as Sybil and he stated that he had a fixed beam as VK8. It is believed that he would welcome other QSOs and VKs, OS, via WA3HUP.

VB6TC is reported to be awaiting the arrival of slow scan TV equipment. This writer still needs him on any mode for a new oral VR6BQJ. He is supposed to be active for a few days from April 10th, mainly on CW. There's hope yet!

The West Gulf DX Bulletin reports that ST6HF is in the Southern Sudan. He calls on SR100 and SB 220 into a dipole and should be there until the end of April. QSL via G4GFT which is his home call.

THE MALDIVES

If you worked 8Q7AF or 8Q7AG, Cori and Martha Henson during February, QSLs got to their home



A real ham shack — complete with OT.—Andre F8DB.

QTH — 8280 Chestnut Drive, Jonesboro, Georgia 30236.

The West Gulf DX Bulletin also reports that SM4MIL could be going to 3X, Guinea, in April. Could this be the 3X11X reported above or "Slim" jumping the gun?

Afghanistan, once a fairly open country, is now keeping the countrymen lists. YAO1DX was working on 20 CW at 1330Z daily, calling trade and asking for QSLs via W4WBW. No records of whether he is genuine or not—best keep to the DXers' rule, work 'em first and find out afterwards.

AS1PH, Bhutan, seems to be quite active these days either on 20 CW or on the South-East Asia net which meets at 1200Z on 14320. An AS1PH was heard on 10 metres but the beam heading peaked towards JA.

Very many thanks to VK1DQO and VK4NHE who supplied information, and the West Gulf DX Bulletin published by WA8AUD. My June deadline

is Wednesday, 25th April; any news, views or photos welcomed. Happy DXing.

QTHS YOU MAY HAVE MISSED

C9ACA Barry Parkington, C/- St Andrews School, Box N 7546, Nassau, Bahamas

J2B AZ: Via IBHN, Giuseppe Mauro, Box 836, Napoli, Italy

KG4HCO Harry Chamberlain, Box 12, FJO, New York City, NY 10059, USA.

VP2DAO Clayton Baltazar, 47A Kennedy Avenue Rosedale, Dominica Island, West Indies.

VP2SAB Via W2MIO, Edward Berlin, 47 Paisanne Road, Elizabeth, NJ 07208, NJ, USA.

VP2VBK, Ed White, Box 84, Road Town, Tortola, British Virgin Islands

9V1TK Via JASBIL, Kyo Okazaki, 1 Ebisu, Nakatsu, Oita 871, Japan

3D6AR, Via WAGAHUF.

REPEATERS

Since Christmas, Victoria has had its fair share of repeater problems with 4 repeaters being off the air through various causes at the one time.

CH 2 MELBOURNE

This repeater was vandalised in late November 1978. The receive cavity resonators were stolen, the receiver and control circuitry smashed beyond repair and the coaxial cable was severed.

The transmitter is still intact as it was housed in a separate building.

Damaged equipment at \$1000-\$2000, and an appeal has been launched from Melbourne Ch. 2 users to contribute towards its replacement. Further donations would be most welcome and will help speed the restoration process.

The opportunity has been taken to overhaul the complete system and to arrange for a more secure site to be located.

At this stage it is expected that the repeater will be back in service around late March-April.

It is also believed that the offenders who damaged the repeater are known to the authorities but nothing further can be said at the moment as charges may be pending.

CH 5 MT. WILLIAM

Grenades struck this repeater during late January. The power supply decided to overheat and explode, causing severe damage to the transmitter.

According to reports from the initial testing, the Mt. Macedon system appears to have a service area far in excess of original expectations. Further details will be published after the system has been permanently installed.

CH 4 BENDIGO

The Bendigo repeater was struck by lightning in late January and was off the air for about two weeks. Damage to the repeater itself was minimal but a high gain antenna was destroyed. It is believed that the antenna was not connected to the repeater, as it was due to be replaced to the system a few days after. Even so, capacitive coupling from the antenna to the repeater still caused some damage.

The system is now operational again.

CH 7 MT. WILLIAM

Grenades struck this repeater during late January. The power supply decided to overheat and explode, causing severe damage to the transmitter.

The damage sustained was beyond economical repair and a stand-by unit was prepared for installation into the system. Ch. 7 was back on the air on 20th March.

Ch. 4 Traralgon and Ch. 8 E. Gippsland are to interchange during 1979 to minimise interference to other Ch. 4 systems throughout the State.

Editor's Note: Contributions on a regular basis from the various repeater groups and clubs are welcome for inclusion in this section. Please forward your group's comments in: The Editor, PO Box 2511W, GPO Melbourne 3001.

MAGPUBS

WIA Car Stickers now available:
Send only 20 cents each — GET ONE NOW. Send only self-addressed stamped envelope with 20 cent stamp —
Direct to your Division or from
Box 150, Toorak, Vic. 3142.

New rates for 1979 subscriptions:—

VHF Communications by —	
Surface mail	\$8.20
Air Mail	\$12.40

Single issues, when available
 from Magpubs for 1978/79, will
 be each \$2.10

MAGPUBS — A WIA Membership Service, Box 150, Toorak, Vic. 3142.

HAMADS

- Eight lines free to all WIA members. \$9 per 3 cm for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means the advertiser's name and address are correct in the current WIA Radio Amateurs Call Book.

FOR SALE

Yaeu FT-301D Transceiver, fully solid state with digital readout with deluxe power supply FP-3010, \$1200 O.N.O.; also matching FV-301 remote VFO, \$125. VK3AVE. Ph. (03) 64 4290 bus.

Heathkit BB10 Monitor Scope, 1.5-144 MHz, up to 1 kW power, with 2 tone test, L. White VK4AMF, 30 Oaklands Pde., East Brisbane, Q. 4106. Ph. (07) 391 0160.

Yaeu FT301D Transceiver, 160m-10m, with SSB, AM & CW filters, FP301 AC power supply and mobile mount for FT301D, \$1200; 6 ft. 50m adjustable mobile whip serial with spring, \$40; AL48DXN 40m & 80m trapped dipole in original carton, \$50. R. J. Lukeis VK3BRL, Box 18, Eaglehawk, Vic. 3558.

Syntex D-1000 digital frequency counter, model 1034 with 1 digit display and crystal oven options. Operating manual and full circuit details, \$85 O.N.O. 16 160m-10m trap vertical antenna, good condition, \$85 O.N.O. Ray Roche VK1ZJ/R, 4, 1 Heather St., Silky Beach, Qld. 4304.

Janel Laboratories (U.S.) Model 80PR 28-30 MHz ion noise satellite pre-amplifier, 12V DC operation, complete with circuit diagram, two available, \$325 per unit. Ross Treloar VK2BPZ. Ph. (02) 239 5267 bus.

Icom IC202 2m SSB Transceiver, complete and in exc. cond., \$140. VK3KK QTHR. Ph. (03) 469 4200 after 6 p.m.

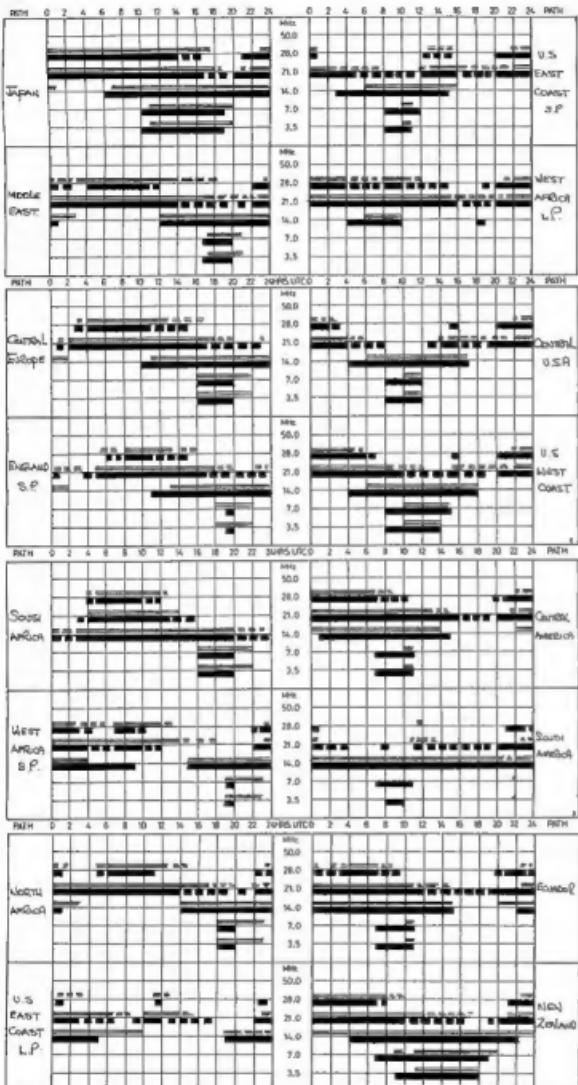
Pya Leader Mod. MVA519 Lo Band AM Mobile Transceivers. Quantity 15, various conditions, majority functional, still commercially licensable, adult construction to 6 metres = \$200 the lot. S. Marsh VK3ZHI. Ph. (03) 725 7262.

Gelex SW230 2 Mhz FM Transv., 25W, repeaters 2, 4, 6, 8 & simplex 40, 50, 51, good cond., \$150. P. Wilson. Ph. (03) 772 1802.

Realistic DX160 Rx, ideal for listening and beginners, only 12 months old, \$100. VK2VHP. Ph. (02) 64 2195.

Communications Rx Drake SSR-1, —0.5 + 30 MHz, solid state, battery & 240V AC operated, built-in speaker & antenna, as new, in original box & with handbook, \$250. VK2ZFN. Ph. (02) 713 1531 AH (April).

Ch. 27 MHz Pace 1000m, full PLL, very suitable for 10m conversion and extensive channel range, \$100. TRC 47 — Ch. 27 MHz, all crystal, \$100. VK3NSM. Ph. (03) 743 6992.



LEGEND:

FROM WESTERN AUSTRALIA
 FROM EASTERN AUSTRALIA

BETTER THAN 50% OF THE MONTH, BUT
 NOT EVERYDAY.

LESS THAN 50% OF THE MONTH.

PREDICTIONS COURTESY I.P.S. SYDNEY

ALL TIMES UNIVERSAL TIME (GMT).

Yaeus FRQ-7, exc. cond., \$275. Hygain VII deluxe 11m base station with digital clock and power mic., easy conversion to 10m, power easily boosted to 25W PEP, \$220. Johnson Viking 352D, 10m 20W PEP, thumbwheel dial up or frequency, with rockin' armature mic., \$175. Jim VK3CCE, Ph. (089) 62 4417.

Kenwood TS 700A, all mode 2m transceiver, as new condition, with RF stage and external VOX, operating and service manuals incl., \$680 CND. Tektronix Model 524 AD-5*, single beam oscilloscope, DC to 10 MHz in first class cond., probes, manuals and spares, \$220 CND. VK5AT, "73" Service 'scope, in good order, \$75 ONO. VK2HF, QTHR. Ph. (03) 488 1855.

Yaeus FT-75B, AC and DC power supplies (FP-75B and PSU-DC-75B), external VFO, mobile mount and manual, \$400 CND. VK5ATM, 26 Collingwood St., Port Pirie, SA 5540. Ph. (086) 32 2009.

Tessu FRQ-7 Rx, purchased 1978, as new, in carton, \$250. Bob Gutherlief, 31 Bandon Tce., Marino, SA. Ph. (08) 298 4305.

Yaeus FLDX/FRDX 400 matched Tx/Rx, with manuals, 10-20m, 240W PEP, 2 and 6m converters, mini comb., FP, \$500. Yaeus Y150U dummy load, \$96 new. VK2NSE, Box 1000, Lande Quirindi 2343.

PC301 180-10m ATU, \$240 ONO. FTV250 2m transverter, \$280 CND. Antennas with all mounts and coax, 16m dipole, 10m 5/8 stainless steel whip, 10m helical, 8m helical coax (long) RG8, RG58 with plugs, short bits also. Rotator, new with cable, light duty, \$100 the lot. Contact Kearney, Ph. (03) 818 0331, ext. 135.

Ewan 8080A miniature 80m 8BB transceiver, up to 180W input, uses as mobile, portable or base, \$250. VK2AVQ, QTHR. Ph. (02) 88 2358.

Ham II CDR Ant. Rotator, unused, original packing, \$150. TMSMK3 Tri-band Hygain antenna, unused, original packing, \$210. 18AW Hygain multi-band vertical ant., VGC, \$50. Constant voltage transmitter, could be tapped, \$80. VK3KPB, QTHR. Ph. (03) 93 1638.

Honda E180SW AC & DC motor alternator, had little use, looks like new. **Tessu FT101**, little use, looks good and works good, with manuals, \$500 each. VK5SS, Ph. (051) 47 2265.

Linear amp with 2 x 500Zs in final together with PSU, max. secondary voltage 5000V, 240V primary with secondary winding, 20, 30 & 40V at 10amps, each side of centre tap together with 2 bridge rectifiers at 2N3055s. H. G. Wilson VK4AGO, QTHR. Ph. (07) 72 4107.

Crank-up Tower, 2 section, solid galv., with Ham 'N' rotator attached & with indicator, \$250. Drake RA4 RX, exc. cond., all ham bands 1.5-29 MHz, N.H., \$350. VK3LQ, QTHR. Ph. (03) 509 2556.

Drake RA4 RX, in mint condition, \$500. 4WPM noise blanker, \$45. MS-4 speaker, \$30. Also 8 auxiliary bays, manual available. **FTF Transceiver**, as new, \$500, with separate PSU. FP-4, \$50, complete with mic, all assoc. cables, etc., original cartons, manual. Ph. (03) 570 7582.

Ten Tec Argonaut 600, with matching 50W Ten Tec 4700, Multi-T 2m, most channels, \$175. VK2SM, QTHR.

Kenwood 920D (AC/DC Model), \$550. **Yaeus RT2000 Linear** (2 x 572B triodes in GG), \$400. **Yaeus YC355D** freq. counter, \$300. VK2BOA, QTHR. Ph. (046) 61 1580.

TG32 Senior Triband Beam with 40m traps and element; also balun, \$175 ONO. VK3ACN, QTHR. Ph. (054) 42-1258 BH.

Leader LBG 15 RF signal generator, in carton, with manual and cable, little used, \$80. VK5NT, Hallberg, SA 5643 or Ph. (088) 63 1268 evenings.

TS820S, 590Z, IC280, \$320; IC202, \$170; IC502, \$170; TCA1675 with Chs. 8 & 40, \$55; TTL Multimode RTTY demodulator, \$55; YC355D freq. counter, \$200; all prices ONO. VK3BEJ, QTHR. Ph. (050) 24 5814.

Yaeus FRQ-7 Rx, as new, \$280. Mini-Products hybrid quad compact beam, as advertised QST, 14, 21, 28 & 50 MHz, 11 ft. elements, 4ft. B in-boom, with balun, suit TV rotator and hardware. Ray VK3RF, QTHR. Ph. (03) 878 5305.

WANTED

For Swan SW 240, 2 band Transceiver, function switch SW1; four position control for off, receive, transmit, tune. VK4DO, QTHR. Ph. (079) 28 1550.

Parts for AR7 (HRO type) Rx, particularly coll boxes, circuit diagrams and even junk units, for overseas society, therefore donations most welcome. VK3CIF, QTHR.

Variable capacitors — transmitting — high voltage type, "Bill" Perry VK3BAV, QTHR. Ph. (03) 588 6665.

Yaeus FL2100B Linear, in good condition. J. E. Falkner VK3EB, QTHR. Ph. (03) 41 5037 bus.

Drake Equipment: T4XG Tx, RA Rx, noise blinder, CW filters, speaker, etc.; urgently required. Please contact Peter Nesbit VK3APN, 78 Downshire Rd., Elsternwick, Vic. Ph. (03) 523 6932 AH, or (03) 37 9001 bus.

Type 3600 Relay, also circuit diagram of disposal test set D13 Type 1, Serial 16. Measures AC & DC volts 50-250-500V AC, DC current 1-10-50 ampera. Prices to: Alan Bull VK2FB, 67 Fernleigh Rd., Wagga 2650, NSW.

TRADE HAMADS

Why drill a hole in the roof of your car? Fit a "J" & "D" Cadmium-plated mounting bracket direct to your side bar — fits all whips, etc. — \$2.00 plus postage 50c. B. Chivers, 19 Naomi Crn., Baywater, Vic. 3153. Ph. (03) 729 3996 AH.

QSL card log books, contest sheets — send 20c stamp for samples and prices to Linda Luther VK4VK, P.O. Box 498, Nambour, Qld. 4560.

KLM imported mono beam beams for 40, 20 & 15 (ex-steel). Comprehensive range high gain beams 10m, 15m, 20m, 40m, 70cm, 2m, 1.25m, 70cm, 40cm, 20cm, 10cm, 6cm, 4cm, 2cm, 1.5cm, 1.25cm, 1.1cm & 1.0cm models suit UHF-CB. Range of baluns and power dividers. Write for free catalogue. ATN Antennas, Box 80, Birchcp, 3483, Ph. (054) 92 3211, ask for 264.

Rotators CDE, Ham HI Rotators, complete with 33 metres Belden rotation cable, \$325.00. Cushcraft ATB-34 4 element Tri-Band Yagi with balun, full size, best available, \$290.00. Cushcraft ATV-4, 10-40m, 4 element verticals, \$105.00. Alpha PA-76AE 1-30 MHz Linear Power Amplifier, \$100.00. Elec-Elec 8874 tubes, maximum legal power, plus continuous duty, \$1995.00 — the ultimate. Contact James Goodger VK2JO, Australian Sound & Signal Research, 11 Edspel Rd., Bondi Junction, 2022 NSW. Telephone (02) 389 0428 — 389 7740 — AH (02) 38 7796.

XITEK "Glass Teleprinter", needs only a keyboard and TV set to originate and display 16 lines of 64 chars; switchable for 45.45 bauds-10/300 ASCII, 20 mhz or TTL interface; full U/V and Greek chars in ASCII mode, addressable cursor; feed-on-board PSU 9-12V AC or plug into an S-100 slot; micro-computer controlled pre-programmed; full kit, \$169, including delivery and sales tax; suitable keyboard kit, \$70. From The Micro Shop, Box 207, Gawler, SA 5118.

ADVERTISERS' INDEX

AMATEUR'S PARADISE	20
AMATEUR RADIO ACTION	20
ATN ANTENNAS	59
AUSTRALIAN SOUND & SIGNAL RESEARCH	7
*BAL ELECTRONICS	22
BRIGHT STAR CRYSTALS	21
*CHIRNSIDE ELECTRONICS	52
B. CHIVERS	50
CUSTOM COMMUNICATIONS	46, 47
DELTA COMMUNICATION SERVICES	20
*DICK SMITH ELECTRONICS	28, 31

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. R. E. EARLE
Mr. C. F. A. LUCKMAN
Mr. H. K. BAVISTER
Mr. G. J. CLEMENTS

VKELC
VK3JT
VK2ZDQ
VK3TK

OBITUARY

CLAUD BURNS VK4CB
Claud, who was born in Maryborough in 1903, had been an active amateur radio operator for over 54 years and in fact was active on the air up to within a few days of his death.

His first transmission was in 1924 from Rabaul, using morse code. His first amateur radio operator's licence was issued at Kingaroy in 1927 and his first call sign was VK4CB. This call sign was later changed to VK4ZY, the call sign which will now be sadly missed on the air waves.

From the "Calma Post", 27.11.78.

CHARLES F. A. LUCKMAN VK3KT
Charlie died on 21st January 1979, after a long illness.

Charlie was first licensed in Sydney in 1928 where he was employed as an electrician with the old Government Tramway workshops at Randwick. He was a leading light in the formation of the Lakemba Radio Club, VK3LR, being our first president.

He was a most likable man with a keen sense of humour, ever willing to help in any way with a radio problem. I always remember his assistance in the late 1930s when I was trying to master the Morse code as he gave up his leisure time to provide me with Morse practice. He had the great ability to send more on a hand key with the right or left hand equally well.

His wife pre-deceased him some years ago. This sad blow plus the fact that someone broke into his shack and stole his CR100 receiver, seemed to numb his interest in amateur radio and his health declined. After developing Parkinson's Disease he lingered for a few years, finally passing away, aged 77, at the Masonic Home at Glenfield near Liverpool.

Many of the old club members will remember Charlie for his kindness and great enthusiasm in the early 'thirties. Our sympathy is extended to his daughter Doreen, and two sons, Tom and Alf.

Gilbert Pollock VK2FU

EMONA ELECTRONICS 20, 36, 37
GFS ELECTRONIC IMPORTS 45
HAM RADIO SUPPLIERS 7
LINDA LUTHER 50
MICRO SHOP 50
EDDIE ROOMS 53
*SCALAR INDUSTRIES 7
SIDEBOARD ELECTRONIC IMPORTS 39
SIDEBOARD ELECTRONIC SALES 8, 28
SPECTRUM INTERNATIONAL INC. 6
GRAHAM E. STALLARD 30
TOOWOOMBA RADIO CLUB 5
TRIO-KENWOOD 21, 51
*VICOM 2
WILLIAM WILLIS & CO. PTY. LTD. 21
* WIA WARF FUND SUPPORTER



A NOTICE OF INTEREST



The local hams in the colony of New Holland are duly advised that Trio-Kenwood have just received a shipment of the new Power Plus TS-120S series.

Engineered for the more discerning amateur operators. The TS-120S is the most recent successful result of Kenwood's advanced engineering capability, giving a compact, lightweight transceiver with 100W RF output power.

Another new arrival is the TR-7625 2 meter FM transceiver with memory, designed to permit multichannel (800-channel) operation.

You are respectfully invited to view this merchandise at your local friendly Trio-Kenwood retailer.

PS-30 20A Power Supply.
SP-120 Speaker unit.
TS-120S HF SSB Transceiver.
VFO-120 Remote VFO unit.



TR-7625
2M FM Transceiver.



TS-770

P.S. We would like to inform all VHF buffs
that we now have Phase III Satelite Equipment.

TRIO-KENWOOD (AUSTRALIA) PTY. LTD.

31 Whiting Street, Artarmon, Sydney, N.S.W. 2064. Telephone (02) 438-1277

Interstate Distributors:

VIC: VICOM IMPORTS PTY. LTD. (03) 699-6700 • **QLD:** MITCHELL RADIO CO. (07) 57-6830 • **S.A. & N.T.:** INTERNATIONAL COMMUNICATIONS SYSTEMS PTY. LTD. (08) 47-3688 • **W.A.:** WILLIS TRADING CO. (09) 321-7600

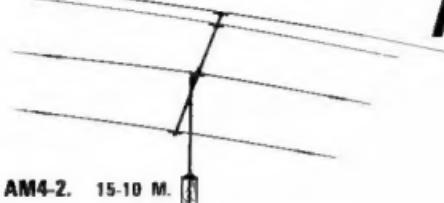
• **TAS.:** ADVANCE ELECTRONICS (003) 31-5688

PLUS MANY OTHER REGIONAL OUTLETS THROUGHOUT AUSTRALIA

CHIRNSIDE ELECTRONICS

FRED SWART - VK3NBI

AMTENNEA TYPE AM 4-2



AM4-2. 15-10 M.

DUO BAND BEAMS NOW ONLY

\$159

8 dB. Forward Gain.

12 month warranty.

25 dB. front to back.

Solid Construction.

4 M. Boom.

2 kW. Power Rating. (ideal Novice use!)

Soon available TYPE AM 3-3. 20-15-10 M.

SUPPORT LOCAL INDUSTRY.

ROTATORS

EMOTATOR Rotators have thermal cut-out
for overload protection.



EMOTATOR model	Torque (kg./cm.)
801 LBX	1,500
802 CXX	4,000
1102 MXK	10,000

COAX



Switches

EMOTATOR "THE BEST ROTATOR"

201AXX. New Model.....	\$175
103LBX. Medium Duty.....	\$169.
502CXX. Heavy Duty.....	\$249.
1102MXX. Extra Heavy Duty.....	\$369.
503LCXX. Extra Heavy Duty.....	\$379.
103 Mast Clamp.....	\$2.50
VCTFX-7. 7 Core Cable.per Metre.....	\$2.20
VCTF-6. 6 Core Cable.per Metre.....	\$1.00
VCTF-5. 5 Core Cable. per Metre.....	\$0.90.

MODEL 201AXX NEW MODEL
High/Low speed
Rotation Torque = 900/100 Kgm
Brake Torque = 1500 Kgm

ANTENNA COUPLERS



HC-75. Tokyo Hy-Power Labs. Transmatch 75W PEP.....	\$69.
HC-25D. Tokyo Hy-Power Labs. Transmatch 250W PEP.....	\$85.
HC-500A. Tokyo Hy-Power Labs. Transmatch 500W PEP. 160W.....	\$119.
HC-2500. Tokyo Hy-Power Labs. Transmatch 2.5kW. PEP.....	\$199.
AT-200. Kenwood. 200 Watts.....	\$184.
FC-301. Yaesu. 500W Inc. SWR and PWR Meters.....	\$239.
FC-901. Yaesu. 500W Inc. SWR and PWR Meters.....	\$269.



Only. \$65.

TRAP DIPOLES.

26 EDWARDS RD.

LILYDALE 3140.

PHONE (03)726 7353

FAST MAIL ORDERS.

All prices include Sales Tax. Freight and Insurance extra.
Prices and specifications are subject to change without notice.

AMTENNEA. ANTENNAS

TRAP
VERTICALS.



NOW AVAILABLE

ALL AUSTRALIAN MADE TRAPPED
VERTICAL ANTENNAS.

80-10 M AMTENNEA TYPE AMV-5

only **\$99** including radial kit.

Why pay more for imported types.

AUSTRALIAN MADE. MULTI BAND BEAMS.

AM 4-2 • 15-10 M.

\$159.-

AM 3-3 • 20-15-10 M.

\$219.-

MONO BAND BEAMS.

AB 3-10 • 3 el. 10 M.

\$89.-

AB 5-10 • 5 el. 10 M.

\$89.-

AB 3-15 • 3 el. 15 M.

\$89.-

AB 5-15 • 5 el. 15 M.

\$139.-

AB 3-20 • 3 el. 20 M.

\$129.-

AB 4-20 • 4 el. 20 M.

\$159.-

Allow 10 days for delivery.

VHF BEAMS.

AV 5-2 • 5 el. 2 M.

\$28.-

AV 8-2 • 8 el. 2 M.

\$39.-

ROTARY DIPOLE.

AM 1-3 Dipole 20-15-10 M.

\$ 99.-

Due to great demand, some delay may occur.

Open 6 days a week.

